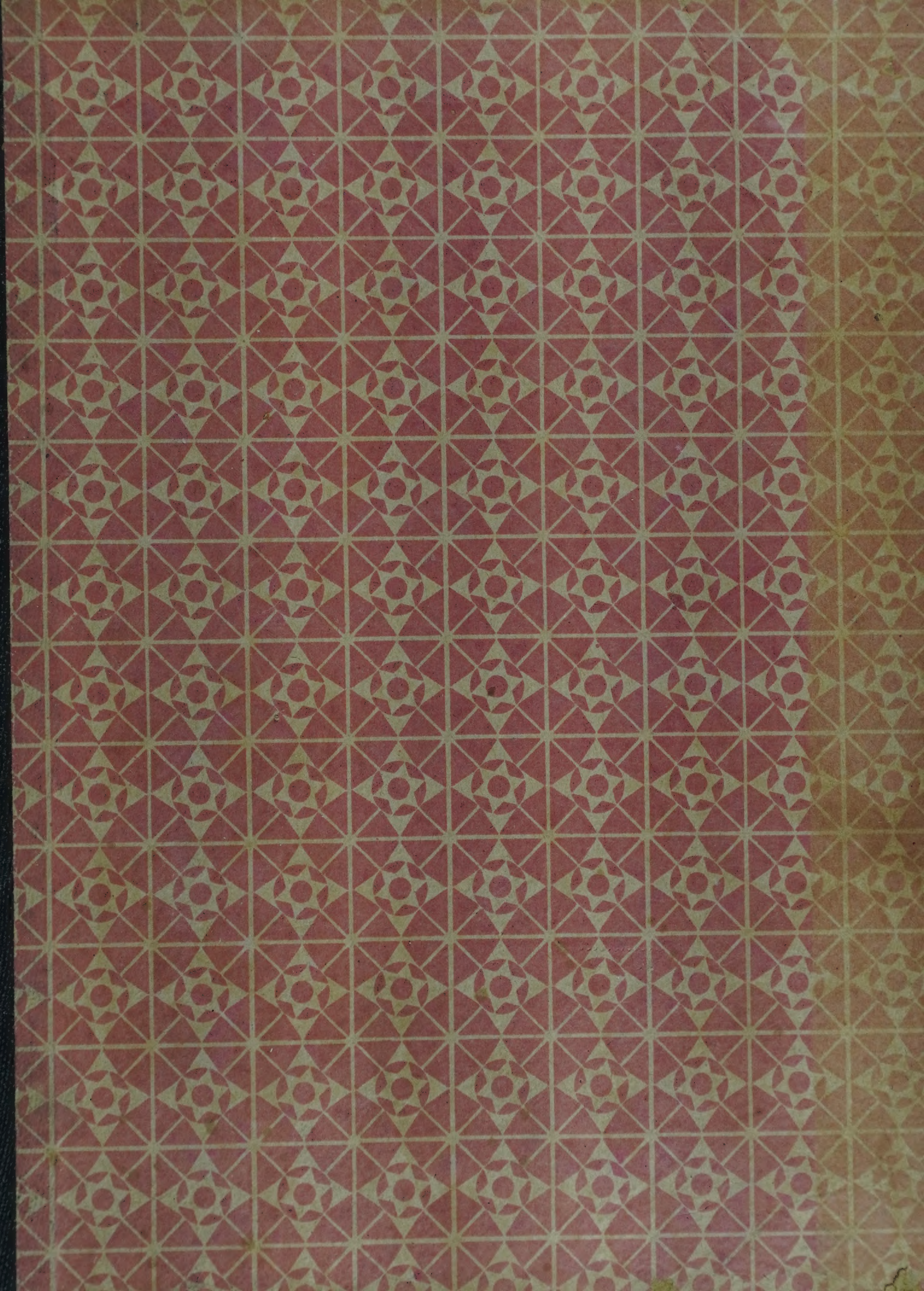

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University News

JANUARY 1, 1985

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- Education for Rural Development
- College Development Wing: An Appraisal
- Indian Science Congress
- Seminar on Pre-Colonial & Post-Colonial History of Manipur
- New Regulations for PhD at Cochin Varsity
- Tissue Culture Laboratory at PKV

CLASSIFIED ADVERTISEMENTS

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No. BBA/Advt./5184(II)
Dated : 15th Dec. 1984

Applications in the prescribed form are invied on or before **15th January, 1985** for the Post of Director of Extension Education (T&V System) in the Pay Scale of Rs. 1500-60-1800-100-2000-125/2-2500/-.

Qualifications

Essential

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Vani Vihar, Bhubaneswar-751004

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Dated: 20-12-1984

Corrigendum to Advertisement No. Estt.I/886-C/VI-Plan/A-6198/84
Dated 03-2-1984.

The last date of receipt of applications for the following teaching posts advertised vide No. Estt.I/886-C/VI-Plan/A-6198/84, dated 3-2-1984 is further extended till the 21st Jan., (upto 21-1-85) 1985 consequent upon the decision of the Syndicate, dated 15-12-84 to change the specializations "as Open".

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Editor :
M.S. RAMAMURTHY

Dear Reader

University News has completed one year of its publication as a weekly. From being published once in two months to becoming a weekly is by all means a progress satisfying and exciting. Many obstacles had to be overcome. What egged us on was our conviction that one of the more important factors contributing for a healthy growth of the university system of the country is dissemination of information. The extent of enthusiasm shown by the universities in this common endeavour is reflected by the flow of information from the university system to us here in Delhi.

It has been our endeavour to accommodate all information received from the universities in the most appropriate manner. Sometimes it has not been possible to include the news received. Two reasons for this non-inclusion deserve to be mentioned. One is the late receipt of information. As is well known current information gets precedence over news relating to past events. Secondly, the nature of the information which is sent to us is of paramount importance. University News has, as its primary objective, dissemination of news of a positive nature. The range of such information needs no detailing. We are also certain that there is no dearth of such news. The university system in this country is not merely expanding but each individual university is embarked on a path of growth. It is this which needs to be highlighted in the form of news and reports of activities, programmes, plans and policies. The image of a university in the society is as important as the programmes it offers. University News endeavours to strengthen this link. It is only this kind of news which would enable the system to grow and strengthen the academic infrastructure and programmes of the universities. It is only news of this variety that is included in University News.

There is no room for complacency, however. The world is moving so fast that one has to move constantly even to remain at the same place where one is standing. This is putting pressure on us and unless we are able to successfully overcome the pressure we would be sliding back. It is this aspect which is very important to be borne in mind by those who in the university system are to keep us informed of the developments. The speed of dissemination and the content of news are of fundamental importance.

It will be our endeavour to continue to strive to provide worthwhile news and views of and relating to the Higher Education system. On this New Year's day of 1985 we at University News re-dedicate ourselves to achieving this goal. More active cooperation from the universities will make our task a little pleasanter. We believe that University News is a unique forum for bringing together universities in the country. And we believe that universities do want such a forum.

I take this opportunity of wishing each one of our readers a Happy New Year and look forward to greater collaboration with everyone interested in the healthy growth of our Higher Education system.

1-1-1985

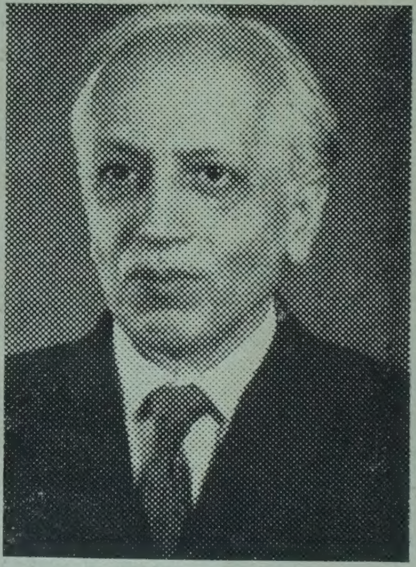
—Editor

72nd Session

Indian Science Congress

The 72nd Session of the Indian Science Congress will be held in Lucknow from January 3 to 8, 1985, under the auspices of the University of Lucknow. The General President of the Congress is Prof. A.S. Paintal.

Professor A.S Paintal was born in Burma on Sept. 24, 1925 in a small but well-known town called Mogok. After receiving his early education in Burma he came to Punjab before the war and passed his matriculation examination from S.B.B.S. Khalsa High School, Lahore. He passed the Intermediate (Science) examination from Forman Christian College, Lahore in 1943 and then got admission in King George's Medical College, Lucknow. He obtained his M.B.B.S. degree in 1948 as well as many prizes, medals and distinctions during the various examinations. He abandoned a clinical career as he found it almost impossible to pursue his scientific interests in the environment in which clinical work was done. Prof. K.N. Mathur (Prof. of Physiology) who himself set an extraordinary example of detachment and Prof. Kali Prasad, Prof. of Psychology in the University of Lucknow encouraged him to pursue his initial interest in the study of the Galvanic Skin Response. His work on this subject resulted in a M.D. thesis as well as his first paper entitled "The galvanic Skin Responses of normals and psychotics" published in the Journal of Experimental Psychology in 1951. He was awarded a Rockefeller Fellowship after he had obtained his M.D. degree in 1950, to work with Prof. D. Whitteridge in Edinburgh. There he began his work on the conduction velocities of individual afferent fibres which subsequently led to his well-known contributions in the field of visceral mechanisms in health and disease which he carried out intensively after his return to India in 1952 leading to the discovery of the gastric stretch receptors, the ventricular pressure receptors and the type J receptors. These contributions added to his earlier discovery of the volume receptors in the atria of the heart (i.e. the type Batrial receptors) gave him a leading position in this field.



Prof. A. S. Paintal

After returning to India he joined the Technical Development Establishment Laboratories of the Ministry of Defence as Control Officer Physiology where he ran a large division involved in applied research while carrying out his work on visceral receptors. In 1954 he joined the Vallabhbhai Patel Chest Institute of Delhi University as an Assistant Director. In 1956 left for the United States to work with Prof. Hunt on fusimotor neurones at the Albert Einstein College of medicine as an Associate Professor. This work he continued with Prof. Hunt when both of them moved to Salt Lake City in 1957. He returned to India in 1958 to take up his appointment as Professor of Physiology at the All-India Institute of Medical Sciences. There he completed his notable work relating to the discovery of the pressure-pain receptors of muscles and he wrote his two outstanding reviews published in 1963 and 1964 which continue to be a source of important information.

In 1964 he joined the Vallabhbhai Patel Chest Institute where he has been serving as its Director ever since. Here he carried out his notable work on Chemoreceptors and type J receptors and their reflex effect. He was elected to the Fellowship of the Royal Society of Edinburgh in 1966, the Indian National Science Academy in 1971 and the Royal Society of London in 1981. He has been the President of the National College of Chest Physicians since 1982 and has been honoured both in India and abroad through several awards, prizes and Honorary degrees. ☐

18 JAN 1985
C.F.T.R.I., MYSO

Education for Rural Development

Ramlal Parikh*

India continues to live in villages. According to 1981 Census 76.17% population lives in 5.75 lacs villages. Nearly 4.50 lakhs villages have a population of less than 1,000 persons. There are hardly 1000 villages with optimal population size of 10,000. This makes it obvious that any process of 'Planning and Development' in India can hardly succeed without transforming its "Rural Society".

The rapid transformation of the Rural Society depends not on the outcome of education in terms of training man-power alone. Even more than that it depends on the process of education and the manner in which it has linkages with the process of social & human development as such. Both the processes of education & development can be more easily interlocked in the rural society rather than the urban society. It will be hardly helpful if the two processes of Education and Development continue to operate as parrellel streams with only peripheral links. It is imperative to inter-lock these and make these inseparable. The rural society has greater potentialities to achieve such inter-locking, if both educational and development processes are reshaped to this end. A feeder and ameliorative approach on the part of education is not enough. Our object should therefore be not 'Education and Development' but 'Education for Development'. In the context of India, we must recognise that Rural Development as the central dominant focus of the Development process.

What is the meaning of the word "Rural"? The term "Rural" does not imply a mere non-urban character in spatial sense. It is a social and cultural concept. Rural society has its own social and cultural ethos and therefore requires full comprehension of its ingredients, while extending the process of development to this vast sector of our people. The Rural Development is not a negative or a remainder concept of non-urban development. It is positive concept of reconstructing the rural society to fully develop its potentialities and capabilities to be self-reliant in basic needs. The word Rural thus stands for a 'Socio-cultural entity' and is not merely a territorial or locational concept.

Once the positive and indigenous character of the rural society is recognised, a development process in tune with its entity and ethos should be fostered. The rural development should operate in the framework of the Rural Culture and not just as a rural location. The basic character of our rural society even after 35 years of planning is pre-dominantly agricultural. According to 1981 Census 90% of rural population depends on agriculture. Even in agriculture 75% depends on rain-fed agriculture. 51% of the agricultural holdings still consist of less than 1 hectare. Agricultural holdings with less that 2 hectares are 90%. In terms of gainful work 30% are landless agricultural workers and 51% are cultivators, many of whom do not have land of their own. An approach of mere transfer of technology or extension of urban facilities to villages can hardly become practical in these conditions. The rural society must be reconstructed to be able to withstand the onslaught of urbanisation which flourishes on the exploitation of the villages. Mahatma Gandhi had warned as back as 1929 by stating :

> "To serve our villages is to establish Swaraj, Everything else is but an idle dream".

He had further stated in 1936 :

> "If the villages perish, India will perish too. It will be no more India. Her own mission in the world will get lost. Instead of village subserving cities, cities must subserve villages".

In 1942 he had further elaborated and said :

> "My idea of village Swaraj is that it is a complete Republic and Independent of its neighbours for its own vital wants and yet Inter-Dependent for many others in which dependence is a necessity".

This type of a Gandhian approach to Rural Development is more than justified by the experience of planning in last 35 years.

What is the meaning of the word "Development"? Though this word has become a catchword of the contemporary age, the true meaning of the term is not common even in the votaries 'Development'. Even they are seriously questioning themselves about the meaning of the word "Development". Development does not necessarily leads to 'Social Change' and much less to "Equitable change". It is disturbing to discover that despite Development disparities widen. This does not mean that we should have a static society or a status-quo society and give up development. What we need is a change in the process of development so that it does not perpetuate the status-quo but accelerates the movement towards an equitable society. We are wedded to growth with social justice but we have experienced that growth is more accumulative than distributive and therefore does not trickle down to the micro-level communities. Our thrust needs to be towards 'Development without Disparities' and 'Social Justice for Growth'.

Vice-Chancellor, Gujarat Vidyapith, Ahmedabad

The Rural development thus provides us with an opportunity to work at the micro-level in direct communication with the people at the grass-roots. It is here that the role of education particularly higher education becomes crucial and vital. Having recognised that the extension has an equal role with teaching and research, organic linkages with the micro-level communities through continuing education and extension work in rural and semi-rural areas becomes imperative.

The programmes of continuing education and programmes of Rural Development, both should reflect the character of the rural community which is not just locational. There could be rural communities even in urban areas and conversely there could be urban communities in rural areas. So it is not a question of location but a question of Socio-cultural ethos. It is still possible to reconstruct our rural communities into modern secular and harmoneous communities at the grass-root level by making them integral laboratories of learning and educating to the mutual advantage of the students and people of the rural society.

This is basically a question of social and cultural development which will pave the way for rapid economic development through self-reliant communities. The economic development without concurrent social development has created imbalances and distortions which tend to promote violence and peacelessness in our society. It is a great paradox that development should produce violence rather than peace and harmony.

A programme of integrated rural development devised by the institutions of higher education through their Departments of Adult and Continuing Education should not be of ameliorative nature but of the nature of social change. 'Education for rural development' would mean 'Education for social change through rural communities'.

This is not the work of the Adult, Continuing and Extension work alone. It should be the obligation of all the departments of studies to extend and share their knowledge and skill in a set of communities and get their feed-back by actually working with the people. The Department of Continuing Education should remain a nodal agency to act as a bridge between the departments of studies and the rural communities by promoting programmes of continuing and community education in every branch of learning.

This type of approach if accepted in the extension work or continuing education programmes, will create a sense of belonging in the minds of people who constitute a particular community. The sporadic, ad hoc and peripheral, touch and go approach of the prevalent continuing education and extension programmes will not be fruitful and meaningful. It does require an integrated approach.

Community education is the most appropriate modality of continuing education and extension work which can provide depth, integration and spontaneity to this programme. All institutions of higher education should be converted into Community Education Centres by extending the buildings of physical facilities of the institutions to all the people of the community. The surrounding communities should have a whole day access to physical and intellectual resources of the University, College or the School. To begin with every college in the rural areas should institute a Community Education' centre in its premises. There should not be any destruction between off-campus or in-campus programmes. People of the identified community should have direct access to the premises of the institute where they themselves can suggest the programmes they want to satisfy their thrust for knowledgea nd develop 'lust for learning'. The educational programmes emerge from such direct inter-action between people and educators. An integrated package of continuing education with inbuilt extension programmes should be conducted through the community education centres by using the existing infra-structures of the concerned educational institutions. Education and particularly higher education thus has a very crucial role to play in the social transformation of the rural society. The role of universities in rural development programmes should not be of peripheral and/or feeder nature but of a catalyst and pivotal nature. Community Education provides most suitable typology of education for rural development. ☐

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College Development Wing : An Appraisal

K. M. Pathusha*

The University Grants Commission in India is different from any grant giving agency in any country of the world in one significant respect. The U.G.C. has been vested with two powers simultaneously. One is the power to provide funds and the other is the power to determine and coordinate standards. In other countries, for example, Canada, Australia, U.S.A. even West Germany, funds are provided by the Federal Governments and there is a good deal of argument about the quantum of grant, the procedures of release and other related issues. In none of these countries, however, does the Federal Government have the same right in respect of the determination and co-ordination standards as the Union Government of India has. The British UGC is not a statutory body. The Indian UGC is statutory body and the UGC Act of 1956 has been amended two times so far in 1970 and 1972, but it has not been amended further in relation to Central Governments' responsibility for education in India as a concurrent subject. The UGC has to be a watchdog of academic standards. At the same time, the UGC has to see that the Universities should be properly maintained and the affiliated colleges should be adequately developed. Only the Central Universities do not face financial problems. The maintenance charges for the UGC have increased so much that resources for further development get reduced.

The annual report of the UGC for the year ending 1983 has noted an increase of 6.3 per cent over the previous year in student enrolment in the Universities and colleges. With two new varsities and 153 more colleges coming up during the year, six per cent more teachers were employed. These are significant figures indicating the quantitative direction of higher education. The Union Education Ministry and the UGC had convened a two days conference of the Vice-Chancellors in India at New Delhi on 21 and 22nd May, 1984. The Vice-Chancellors said 30 percent of the institutions in the country are non-viable and they also asked the UGC to pay more attention to state Universities and Colleges where more than 80 per cent of students were enrolled. The conference also suggested that nearly 30 per cent were non-viable as they did not possess adequate facilities for imparting education at the appropriate level. The VCs' meet also suggested a radical change in the administrative set up so that the academic excellence may be achieved. In this context, the College Development Wing may be made a permanent feature in order to develop affiliated colleges in every university. The UGC has requested the Universities to review the performances of the College Development Wings recently. It is worthwhile to review the performance of the College Development Wing of Madurai Kamaraj University which was constituted in July 1977 on the basis of the UGC's suggestion, to consider the various developmental activities of the colleges. Later during Oct. 1977, the UGC considering the question of setting up of a College Development Council Cell in the Universities with a view to guide the Universities as well as the Colleges in getting the UGC assistance and had decided to sanction 100% financial assistance to Universities for setting up the Council.

The College Development Wing under a Dean is functioning with effect from 6th October 1978. The College Development Council (CDC) is serving as an academic guide to the College system on the one hand and on the other hand to ensure interaction between the academic facilities in the University departments to the teachers with affiliated colleges. The CDC may function as a Policy Making Body in regard to proper planning and integrated development of Colleges. It may conduct surveys of all the affiliated colleges with a view to preparing and maintaining an uptodate profile on each College under theUniversity reviewing the existing facilities and identifying the needs and gaps that need to be filled for the development of the Colleges and make such information available to the UGC and other concerned bodies. The Council may advise the University on all matters relating to development of affiliated Colleges, such as provision of adequate facilities—academic and physical—for raising the standard of learning, teaching & research. The Council may prepare a perspective plan for the development and opening of new colleges and help in the selective development of some colleges to remove regional imbalances and review the inspection reports of the college and suggest remedies. In order to have close contact with the colleges, four sub-committees (one in each district) were also set up in 1978. In each sub-committee three members were nominated as co-opted members from the public who are closely associated with the higher education. The term of office of the College Development Wing has been extended upto the end of Sixth Plan period.

Inclusion of Colleges Under 2 (f) of the U.G.C. Act

After the formation of the Council, a number of colleges were included in the list of colleges under 2 (f) of UGC Act of 1956. After necessary guidance by the Development Wing, 16 colleges were admitted in the list. Out of 102 colleges, nearly 92 colleges are in the list.

During the Fifth Plan period, 39 colleges received grants for development of undergraduate/

**Principal, Dr. Zakir Husain College, Ilayangudi-623702* post graduate educational facilities. As much as 23 lakh rupees was sanctioned as basic grants to the affiliated colleges for purchase of books/journals and laboratory equipment. Basic grants for the affiliated colleges are cent per cent and the aided managements need not pay matching contributions. Nearly 25 teachers had undergone the Ph.D./M.Phil course.

During this Sixth Plan period, the functioning of the College Development Wing is commendable. Out of 67 colleggs of Madurai Kamaraj University area, 65 Colleges have been sanctioned and released the basic assistance during this plan period. In total the Commission has approved a sum of Rs. 80,36 802 to the colleges and released a sum of Rs. 38,82,893 from April 1982 to Feb 1984. Under Basic Assistance, 162 teachers had undergone the M.Phil course during 1982-83 and 1983-84.

The UGC has approved and released the grants for the development of under-graduate Educational facilities to 61 colleges. In total, the UGC has approved a sum of Rs. 1,89,74,297 to 61 colleges and released a sum of Rs. 26,96,548 from April 1983 to Feb 1984.

The UGC has approved and released the grants for Development of Post Graduate Educational Facilities to 12 colleges. In total, the Commission has approved a sum of Rs. 22,71,007 to the 12 Colleges and released a sum of Rs. 3,85,000 from April 1983 to Feb. 1984. Under Developmental Assistance for Undergraduate Education, 84 teachers underwent the M.Phil course in M.K. University departments.

The UGC has identified the Maths, Physics, Chemistry, Biological Sciences and Tamil Departments of M.K. University for FIP and allocated 10 teacher fellowships from the year 1976-77. So far 195 teachers had undergone and completed the one year M.Phil Degree Course and 16 teachers had undergone Ph.D programme under this scheme from 1976-77. The Government of Tamil Nadu had deputed surplus teachers to undergo one year M.Phil course during 1979-80. 209 teachers had undergone this course through Redeployment Scheme.

Under the proper and timely guidance of the College Development Council Wing, 675 teachers of M.K. University had undergone the M.Phil Course.

Minor Research Projects

The College Development Cell plays a dominant role in implementing non-plan grants and projects also. Minor research projects are availed by 123 teachers from 39 colleges.

Retired Professor's Scheme

Under the UGC scheme of utilisation of services of retired teachers, three major projects for a period of three years have been granted. "Standard spoken Tamil—its evaluation and course" is one such project for which a sum of Rs. 60,000 has been granted for a period of three years to a renowned Tamil Scholar. "Analytical study of the Marine Fishing Industry in Kanyakumari District" is another major project costing Rs. 49,800 for a period of three years to an economist.

College Science Improvement Programme (COSIP)

The Commission has sanctioned so far 16 college proposals for COSIP. Out of 16 College proposals sanctioned by the UGC during 1971-83, nine College proposals sanctioned after the formation of College Development Cell. The Commission sanctions Rs. 3 lakhs for every college for a period of three years to improve teaching facilities.

College Humanities & Social Sciences Improvement Programme (COHSSIP)

The Commission has sanctioned 28 college proposals of COHSSIP. Out of 28 college proposals sanctioned by the Commission during 1974-83, 15 college proposals sanctioned after the formation of the College Development Cell. Madurai Kamaraj University is topping the list in this programme in India (Reference : Handbook of Information on COHSSIP)

Autonomous Colleges

Four autonomous colleges had successfully functioned in Madurai Kamaraj University area for a period of five years and another five-year extension has been granted after the Review Committee's recommendation. They are the trend-setters in academic field.

University Assistance for Individual Research

One of the most innovative programmes introduced by the M.K. University is the assistance given to the University and College teachers for individual research work. Under this scheme, a grant upto Rs. 10,000 is provided for each individual for research project for a period of 2 years. No other University in India is so far known to have introduced a scheme of the kind. This has evoked considerable enthusiasm among the affiliated college teachers.

The College Development Wing is processing proposals for Seminars, Summer Institutes, Refresher Courses, Travel Grants for College teachers and forward them to the UGC for financial assistance.

Apart from such schemes the College Development wing is also concentrating on granting affiliations for new courses, colleges, industry oriented courses, inspecting colleges and looking after the welfare of SC/ST.

Mrs. Sheila Kaul, Union Minister of State for Education and Social Welfare said in the recent Conference of the Vice-Chancellors that "The unprecedented expansion in higher education in the early phase of development quite obviously neglected qualitative improvements". The University which has to serve as a watchdog of academic standards, has not been able to correct such deficiencies since it has not yet decentralised its administrative set up to tone up academic

(*Continued on page* 8)

Dr. Ramanna Addresses Convocation of SNDT Women's University

Excerpts from the convocation address delivered by Dr. R. Ramanna, Chairman, Atomic Energy Commission, at the SNDT Women's University, Bombay on 24th November, 1984.

"...This University was started for the upliftment of women, who are even now subject to many constraints due to social inequalities. At meetings I notice that people in large numbers come to condole the death of Indiraji and praise her virtues, but how I wish people would also pledge themselves not to ill-treat women and reject outright social evils such as dowry and the other horrible legacies of the past. I have never understood why India has kept its women backward when it is obvious to any one that an educated thinking woman is one of the greatest assets to the country. Wherever and whenever women have been given freedom and enlightenment, that country has prospered even as our country did during the great stewardship of Indiraji. She is now among the panchakanyas with an equal or more distinguished place than Tara, Ahilya, Draupadi, Mandodari or Janaki. Under these circumstances I, therefore, feel it is a special honour to be with you to underline the importance of an educated woman specially to face the problems of the coming century.

To the new graduates I would like to express my good wishes that they become useful citizens in the broadest sense of the term. Getting academic degrees is certainly the first step to progressive emancipation. I am sure that the brilliant academic staff of the SNDT have given you the necessary wisdom to be able to judge for yourself as to what is good, what is bad, what is progressive and what degenerate. But there is a limit to what a teacher can do and at best they can only give necessary guidance as to how one can think for oneself. Education does not stop the moment you become graduates or even post-graduates. It is the beginning of a long process of study, analysis, rejection and finally enlightenment.

In recent years there have been many discussions and seminars on the scientific method and scientific temper. I sometimes wonder whether people who use these words really appreciate the true meaning of these phrases. There is confusion as to what is common sense which is essentially intuitive and the scientific method, as well as scientific temper. Having spent an entire lifetime among scientists, I would like to share the following thoughts with you.

Mankind has survived the adverse forces of nature mainly because of one's intuitive sense. This sense has come about as a result of observations of things and happenings around and in turn has allowed one to respond protectively to periods of calamity as well as creativity. It is this that has made the species survive in the first instance and later develop into a higher stage of existence. Actions based on intuition are derived from self-experience as from also traditional inputs which have come about as a result of the collective experience of the entire community. While our very existence is a proof of the success of the method, a system based only on intuition is liable to accumulate errors over the years and can lead to many social evils. To overcome this it has to have a self-corrective feed back. The earlier corrective feed backs were through religion and religious reformation; but are these methods good enough? While nobody can doubt the useful part religion has played in the past, it has failed to protect society from stupidities, cruelties, including those of a self-destructive nature. Above all in some cases it has left many in a mentally static and outmoded state of existence. A lot of our foolish dependence on astrology, medical quackery and ill-treatment of the weak arises from this conditioning of the mind.

In recent times we have a more effective corrective approach and that is that of the scienfic method. If this method has to be a corrective system, there must be an adherence to it with the same intensity of feeling as in Bhakti marga.

बद्धेनाञ्जलिना नतेन शिरसा
गात्रैस्सरोमोग्दमैः

कंठेन स्वरगद्गदेन नयनेनोग्दीर्णवाष्पाम्बुना।
नित्यं त्वच्चरणारविन्दयुगलध्यानामृतास्वा-
दिनास्माकं सरसीरुहाक्ष सततं संपद्यतां
जीवितम्।

Lotus eyed One, we who are always
Aware of the benefit of the nectar;
Of meditating on you, let us in life
Clasp our hands in prayer with
Our heads bowed to you, our body and voices
In a state of quivering ecstasy
And our eyes pouring with tears of joy.

The scientific method is the distilling of all observations to a set of fundamental postulates on which can be built a superstructure of what is truth and rational. Any new observation can change this base and this is where the scientific method differs from the others. If ever a postulate is found unnecessary, it is just eliminated in order to widen the scope of truth. A typical example of this is the development of noneuclidean geometry which denies the postulate that parallel lines meet only at infinity. One of the implications of the method is that all ritual in religion is meaningless as it serves no physical purpose. It has, however, enough humility to say that it may at best serve a psychological purpose, but it is not a fundamental requirement in the sense that it cannot be applied naively to more complex areas like sociology or economics. It can at best be used on a statistical basis or in a wider sense as a basis of logic which forms the foundation of all philosophy. We in India are fond of formal logic and have a great logical tradition, but logic without science can be dangerous.

The other phrase "scientific temper" is often used in the creation of a new Indian society and is attributed to that other great person Pandit Jawaharlal Nehru. Scientific temper is the state of mind where the discoveries of science and its application to every day life are accepted as normal and any reaction to events around are disciplined by involving the scientific method. An example of the lack of a scientific temper so prevalent when I was young was the attitude of people to small-pox. People just would not get themselves vaccinated and even when their own children were dying of the disease they would rather go to a Sitaladevi temple than go for medical help. In this generation the widespread belief of superstition is just as bad if not worse, especially because people like to have the benefits of science but not accept its implications. As another example of what scientific temper implies is the rejection of the idea that one particular day is more auspicious than any other because the panchanga says so. All days and hours are the same, some parts of it may be hot, or wet or cold, controlled by meteorological factors, some may be dark because of the movement of the earth around the sun, all the rest is man-made and subjective. But do not mistake me. Scientific temper does not exclude art or beauty. It is well within its scope and would like to bring to your attention the writings of Prof. S. Chandrasekhar, the renowned astrophysicist of the subject.

My purpose in this address is to bring to your attention that training and degrees are the first step to asking the right questions and the answers will automatically be governed by the scientific method. In the modern world there is no other method. It has all the beauty and mysticism of the methods, but without their falsehood. You young women are in the right period of our history to make the transformation. If you want an example, I have already given you one. Could there ever be a better example than the name of Priyadarshini Indira Gandhi?" □

College Development Wing

(*Continued from page 6*)

affairs in the university and the affiliated colleges". Hence it is imperative to endorse the continuance of the College Development Wing as a permanent feature of the restructured varsity's bureaucratic set up. All those who are connected with the present University administrative set-up will support this constructive recommendation.

Suggestions

The College Development Wing would be more useful only when the Council possesses some more powers to insist on the affiliated colleges to implement its suggestions. The restructured College Development Council will have to change its guidelines for preparing proposals for the 7th plan, only after grading colleges on the basis of its development from the utilisation of the earlier grants sanctioned by the U.G.C, (colleges situated in rural areas should be considered for greater and continuous assistance from the UGC. The CDC must have power to appoint a panel of experts to identify non-viable or sick colleges in every district and draw a perspective plan for its physical and academic developments.

Number of Teacher fellowships for panchayat and rural colleges may be increased since teachers in rural areas may not have enough opportunities to avail part-time or evening college facilities, whereas their counterparts in towns and cities have such facilities and good libraries in leading institutions. Regarding matching contributions by the aided institutions with regard to development assistance of undergraduate and post-graduate educational facilities, a pragmatic approach has to be evolved, particularly in the case of non-viable colleges. Prompt release of grants will help to speed up developmental activities and simplification of procedures will also help the affiliated colleges to apply for grants. Correspondence regarding the UGC grants may be done in regional languages by the College Development Council. The Development Council may also organise a meeting of heads of institutions, secretaries of the aided colleges and the educational authorities of the Government to clear the role of the College Development Council in the academic developments of the affiliated colleges.

The illustrative review regarding the working of the College Development Wing of M.K. University may possibly evoke considerable positive criticism which will convince the educational planners that the College Development Council should be made a permanent body in the University administrative set-up. The present University administrative set up is over-burdened and the Vice-Chancellors and Registrars are not able to cope with the present state of affairs. Hence the College Development Wing must be made permanent whose aim should be to strengthen and control academic standards, student amenities, identfying autonomous Colleges, determination of affiliation policy, identifying weaker colleges on uneconomic colleges with poor facilities and help them. □

Seminar on Pre-Colonial and Post-Colonial History of Manipur and Adjoining Areas

A three-day seminar (Oct. 29-31) on "Pre-colonial and Post-colonial History of Manipur and adjoining areas" sponsored jointly by the Department of History of Manipur University and University Grants Commission was held at the Manipur University recently.

His Excellency, the Chancellor of the University, General K.V. Krishna Rao inaugurated the seminar. The seminar had six sessions.

The Chancellor in his address emphasised the need for study and research into the history of an isolated state like Manipur and the adjoining areas in order to enrich the historical knowledge of our vast and ancient country.

In his presidential remarks Prof. K.J. Mahale, Vice-Chancellor of the University pointed out the historical importance of Canchipur where the University is situated. King Jai Singh built his capital here.

Dr. T.C. Sharma, Professer of Pre-Historic Archaeology and Anthropology of Gauhati University pleaded for opening Post-graduate Department of Ancient Indian History and Archaeology in the newly established Universities in North-East India for development of expertise in archaeological and historical studies as already done in various Universities in the country.

Dr. M.L. Bose of Dibrugarh University viewed that the Hindu Marriage system of succession was adopted in Manipur for preservation of the society and for better progress.

Dr. S.K. Barpujari, retired Professor of Gauhati University developed his point that during the 19th century, the British had no definite policy regarding the hill tribes except the protection of its territories.

Dr. G.P. Singh, Manipur University put forward that the process of Sanskritisation constituted the distinguishing hallmark in the annals of early Manipur.

Many others read papers on various aspects at the seminar.

The seminar made recommendations on the following points:

(1) **Pre-Historic Period**: Regarding the pre-historic and proto-historic periods of Manipur, the investigations and researches have just begun and earnestly taken up by several young Manipuri scholars, the source material for reconstruction of this long period of the history of Manipur is very limited due to lack of organised and intensified archaeological exploration & excavations for the necessary development of which archaeological studies & research under the auspices of Manipur University and the State Government of Manipur along with the collaboration of the recent established North-Eastern circle of Archaeological Survey of India be urgently undertaken.

(2) **Epic & Ancient Historic Period**: The light seen into the legendary and ancient period of the history of Manipur has convinced the delegates that this very important period of the history of Manipur is still shrouded in darkness and the materials are scanty and very controversial. In order to reconstruct fully this phase of history of Manipur a Department of Ancient History and Archaeology be opened in Manipur University.

(3) **Medieval Period**: Because of the dearth of materials on the medieval period, this seminar recommends that urgent action be taken to document old manuscripts and chronicles available in Govt. Archives of Manipur, other states in India, National Archives, India Office Library, London, etc.

(4) **Colonial Period & Post-colonial Period**: The seminar recommends that the State Govt. of Manipur in collaboration with Manipur University undertake a project to assemble and publish a history of the colonial and Post-colonial period in Manipur from both indigenous and foreign sources.

(5) **Archaeological Sources and Museums:** Reorganising the importance of archaeology for reconstructing the early history of the State, the seminar recommends organising archaeological studies, research, explorations & excavations, with the help of the State Archaeology Department of Manipur and the Archaeological Survey of India.

(6) **Indexing & Rare Manuscripts:** Funds and staff should be allotted for the urgent task of indexing and making available copies of rare manuscripts.

JNU celebrates Human Rights Day

The 36th anniversary of the Universal Human Rights Day was celebrated in Jawaharlal Nehru University on 10th December 1984. A Seminar on Human Rights Education was organised at the occasion in which a number of academics and students participated. Dr. J.S. Teja, Secretary, Ministry of External Affairs was the chief guest.

In his inaugural address, the Vice-Chancellor, Prof. P.N. Srivastava said that protection of fundamental human rights has been and should be a matter of global concern. Education should play a crucial role in the promotion of international understanding and greater awareness of human rights and fundamental freedoms. He called for widest possible dissemination of information of basic international documents and existing procedures for the protection of human rights.

Referring to the denial of human rights in South Asia and other parts of the developing world, Prof. Srivastava said that the problem of human rights has attained colossal and complex dimensions because a vast majority of the people in this part of the world, does not enjoy even the right to educate. He said, of the 624 million illiterates, 2/3rd are in Asia and India alone has 243 million illiterates

Prof. Srivastava said the adult literacy programmes in the country should provide a human rights perspective of adult education as well.

A Documentation and Information Centre for Human Rights Teaching and Research, was set up in JNU last year, with the primary objective of promoting inter-disciplinary research and teaching in the field of human rights at all levels of education. The Centre is meant to serve as a liaison and coordination between teachers and institutions specialising in human rights education.

The necessary initiative has been taken to establish close links and cooperation with UNESCO, other international organisations and non-governmental organisations involved in Human rights work and also educational institutions in India and in a number of Asian countries.

About 25 universities/educational institutions in India and outside are collaborating with JNU in the work relating to promotion of Human Rights Teaching and Research.

New regulations for PhD at Cochin Varsity

The University of Cochin has adopted new regulations for the award of doctorates. As per the revised regulations, applications for Ph.D. registration will be scrutinised by an admission committee consisting of the head of the concerned department or recognised institution, the supervising teacher and another member of the teaching or research staff who is a recognised guide in the allied field of research.

An assessment committee consisting of the supervising teacher and an external expert will evaluate the write-up prepared by the candidate covering review of methodology and scope of the Ph.D. work, and make such suggestions as are deemed necessary.

The assessment will be done after six months from the date of registration and six months before the qualifying examination. M.Phil. degree-holders will be exempted from the application of this clause.

Henceforth, every candidate registered for research will be required to pass a qualifying examination before submitting the thesis to the University normally within two years of registration in the case of fulltime research students and three years in the case of part time research students. The qualifying examination for Ph.D. will consist of two theory papers and a viva voce test, with 100 marks for each. Fifty marks will have to be secured in each paper and the viva voce for a pass.

Candidates failing in any paper or viva voce will be required to repeat the whole examination. A board consisting of two external examiners will set the question papers, value the answer books and conduct the viva-voce test. No one will be eligible to take the Ph.D. qualifying examination more than twice.

Every candidate will be required to defend his thesis before an invited audience of research scholars and other experts working in the field.

A full-fledged production engineering department at Annamalai

A full-fledged Production Engineering Department has started functioning since the academic year 83-84, with Dr. P.V. Vaidyanathan as its Head. The Production Engineering Section which was a part of the Mechanical Engineering Department was bifurcated to offer specialised instruction to the aspirants. In a function organised at the Department Prof. R.M. Sethunarayanan highlighted the need for specialisation in an age of knowledge explosion. The Vice-Chancellor, Prof. S.V. Chittibabu, in his inaugural address, urged the students to utilise the existing facilities in the Department effectively, and also stressed the importance of intensive study of a particular subject without sacrificing extensive reading. Prof. V.R. Muthuveerappan who released the Production Engineering Laboratory Manual advised the students to develop their character and social contacts alone with their curricular activities during their stay in the University. Earlier Dr. P.V. Vaidyanathan, Head of the Department of Production Engineering, welcomed the distinguished guests. Mr. G. Baskaran proposed a vote of thanks.

Jammu Varsity introduces rotation for headship of departments

Jammu University has introduced the principle of rotation for appointment of Heads of the University teaching Departments. The rotation will be among Professors. Each Professor will act as Head of the Department for a period of two years.

Annamalai Varsity introduces new PG courses through correspondence

The Directorate of Correspondence Courses and Continuing Education, Annamalai University, is offering postgraduate courses in Chemistry and Zoology from this academic year. It has also introduced three job-oriented diploma courses in Business Administration, Production Management and Materials Management.

New auditorium at BHU

Dr. Madhuri R. Shah, Chairman of the University Grants Commission laid the foundation Stone of the proposed auditorium of the Varsity. Rs. Ten Lacs had already been approved by the Commission for the construction of this much needed facility which is a laboratory for Dance, Drama and Music.

Osmania University constitutes Inspection Commission

Osmania University is perhaps the pioneer in the country in the constitution of an Inspection Commission, to monitor the Academic and Administrative functioning of the University and Constituent Colleges. Prof. Navaneeth Rao, Rector, has been nominated as the Chairman of the twelve member Commission.

The Commission has been divided into three sub-groups with a Convenor for each group.

The Commission shall regularly visit the Colleges and submit its report to the Vice-Chancellor on the following aspects: Regularity in the conduct of classes; workload in various departments — distribution of work-load among the teachers as per the University norms; steps taken to complete the instruction to cover the syllabus as per the almanac of the University; maintenance of attendance registers of students and staff in the manner prescribed by the university; availability of teachers performance in terms of — strict adherence to schedules, adequate preparation, accessibility to students, ability to interest the students in the subjects and ability to maintain discipline; general discipline among students and staff. Physical facilities; any other matter pertaining to smooth functioning of the college.

Postgraduate courses at Women's College of OU

Post-graduate Courses in seven subjects viz. Chemistry, Zoology, Telugu, Philosophy, Political Science, Hindi and Urdu have been introduced in the University College for Women (Autonomous) of Osmania University from the academic year 1984-85.

The aforesaid courses were inaugurated (Mini-inauguration) on 15th November, 1984. The Principal, Mrs. Quadri Begum Razvi presided over the function and lit the lamp to mark the occasion. Dr. (Mrs) Rafia Sultan, Dean, Faculty of Arts, inaugurated the P.G. block. The respective Heads of the Departments, O.U. addressed the new P.G. students.

Indira Gandhi University of Science and Technology

At its meeting held on December 4, 1984, the Syndicate of the University of Cochin resolved to request the Government of Kerala to re-name the University as the Indira Gandhi University of Science and Technology and to name the Campus of the University at Trikkakara as Indira Gandhi Nagar.

Seminar on Indian Ocean at AMU

The extension of the global arms race and the induction of sophisticated weapons into the Indian Ocean pose serious threat to international peace and security as well as to the friendly relations among the litterol and hinterland states, said Mr. K. Subrahmanyam, Director, Institute of Defence Studies and Analysis while speaking at a Seminar on Indian Ocean held at Aligarh Muslim University recently.

About forty delegates from different institutions participated in the Seminar and they were of the view that the UN 1971 resolution urging for the creation of a zone of peace in the Indian Ocean was an expression for the NAM vis-a-vis these developments.

It is unfortunate that despite the lip service paid to that concept by all, no concrete efforts have been made to implement it. It is crucial that the International Conference on Indian Ocean should be convened at the earliest so that the process leading to a negotiated settlement can be initiated.

The Seminar was inaugurated by Padma Bhushan Dr. S. Zahoor Qasim, Secretary, Department of Ocean Development, Govt. of India.

The Vice-Chancellor of Aligarh Muslim University, Shri Saiyid Hamid presided over the seminar and the keynote address was delivered by Air Commodore, Mr. Jasjit Singh.

Processes developed at Centre for Materials Science & Technology, IIT, Delhi

An inexpensive electroless process for the chemical conversion of copper to obtain an efficient solar absorbing surface has been developed jointly by Thin Film Laboratory of the Department of Physics and Centre for Materials Science & Technology. The know-how has been passed on to industry.

A DST-UNDP sponsored project on the 'development of resins, moulding compounds and coupling agents' is in progress for the past few years. Under this, a process for the preparation of vinyl ester resins, suitable for making glass fibre reinforced composites, has been developed. Attempts are being made to transfer the know-how to industry by DST-NRDC.

IIT, Delhi Centre for Biomedical Engineering develops new instruments

The Centre for Biomedical Engineering of the Indian Institute of Technology, Delhi, after successful commercialization of Transcutaneous Pain Reliever, has indigenously developed flexible plastic electrode material for this instrument. This conducting material, besides being useful to medicine, may have many industrial applications like material for electromagnetic interference (EMI) shielding, static charge dissipation and semiconducting material for various electronic applications.

Keeping in pace with technological development, microprocessor based medical instruments such as cardiac output monitor, infusion pump, peritoneal dialysis machine and others have been taken up for development as import substitution.

Collaboration with FRG

The Cochin University has been identified by the U.G.C. for collaboration with a West German University/Institute in the area of Fibre Optical Technology under the Indo-FRG Cultural Exchange Programme.

Dr. C.P. Girijavallabhan of the Physics department has been nominated as the Indian co-ordinator.

New M. Tech. programme at Cochin Varsity

The All India Board of Postgraduate Studies in Engineerin and Technology has cleared introduction of an M. Tech. programme in polymer technology in the University department of Polymer Science and Rubber Technology of the Cochin University.

News from Agril. Varsities

Tissue culture laboratory inaugurated at PKV

A Tissue Culture Laboratory is being established in the Department of Botany, Punjabrao Krishi Vidyapeeth, Akola. Realising the potential of tissue culture technique in micropropogation of plants and in breeding improved varieties in a comparatively shorter time. Shri V.S. Dhumal, the then Managing Director, Maharashtra State Seeds Corporation, Akola, took considerable interest in promoting tissue culture research in this Laboratory.

The Laboratory was inaugurated by Shri Subodh Kumar, IAS, Managing Director, Maharashtra State Seeds Corporation, Akola on 23rd November 1984. Dr. K.R. Thakare, Vice-Chancellor, Punjabrao Krishi Vidyapeeth, Akola, was in Chair. Earlier Dr. Rahudkar, Dean, Faculty of Agriculture and Dr. Bathkal, Director of Research, P.K.V., Akola, stressed the utility of this technique in agricultural research.

In his inaugural speech Shri Subodh Kumar expressed his happiness at the research work being conducted at the Laboratory and assured that the results of research work will be fully utilised for commercial benefits.

Dr. K.R. Thakare, Chairman of the function, stated that plantlets can be developed in large numbers from a piece of tissue, leaf, stem, root etc. He further emphasized that clonal propogation by tissue culture is a novel technique for multiplying plants like datepalm, teak, citrus, papaya etc. This technique directly or indirectly plays a vital role in agricultural research.

Prof. R.S. Raut, Incharge of Tissue Culture Laboratory listed the areas in which the technique can be effectively used.

Annual Conference of Association of Microbiologists of India held at Pantnagar

The 25th Annual Meeting of the Association of Microbiologists of India was inaugurated by the Vice-Chancellor, Sri Kripa Narain at Pantnagar on December 7, 1984. Emphasizing the significance of microbiology in agricultural development, he pointed out that the coming century shall see novel biotechnological developments with far reaching consequences in the overall economy of the country. He also pointed out that microbiologists should try to lay special emphasis on the use of microbes in renewable energy systems and environmental pollution.

Earlier, Dr. D. Sharma, Dean welcomed the delegates to this conference and hoped that the deliberations would hold promise for future developments on this campus and elsewhere.

In his Silver Jubilee Lecture, Professor Pugh of the Portsmouth Polytechnic, U.K. showed how fungal infections can be carried through various pets and other animals and can cause serious health hazards with the molds associated with them. His lecture was illustrated with beautiful colour slides.

Nearly 200 delegates from India and abroad participated in the meeting and discussed areas covering (i) Developmental Microbiology, (ii) Alcohol Fermentation, (iii) Fine Chemicals, (iv) Biopesticides and Biofertilizers (v) Waste Disposal; and (vi) Genetic aspects of microorganisms.

A three-in-one unit developed at Annamalai Varsity

A three-in-one unit comprising a paddy pre-cleaner, paddy separator and dehusker has been developed by the Rice Centre of the Annamalai University. This low-cost unit, the first of its kind, will prove to be a boon to rice-millers in modernising their units. The unit satisfies the regulations laid by the government for modernisation of rice-milling industry. The unit can also do rice grading.

News from UGC

INSAT-1B Programme of UGC

Between 1st and 13th January 1985, the following schedule of telecasts on higher education through INSAT-1B under the auspices of the University Grants Commission will be observed. The programme is of one hour duration every day from 12.45 p.m. to 1.45 p.m. and will be available on the TV network throughout the country.

1.1.85

"Optics VI-Refraction I"
"New Horizons In Steel"
"Where Time Stands Still"
"Ohm's Law."

2.1.85

"Optics VII-Refraction II"
"The Past Perfect Tense"
"In Partnership with Nature"
"India—India"

3.1.85

"Optics VIII-Lenses I"
"The Ozone Story"
"A Look At Rural India"
"S.D.S. Village"

4.1.85

"Optics IX-Lenses II"
"Animal in Focus (Saige Antelope)"
"Swar Sangam"
"Ancient Egypt"

5.1.85

"Open Sesama"
"Matter & Energy"
"The Unstable Nucleus"

6.1.85

No Telecast (Sunday)

7.1.85

"Life its Unity & Its Diversity"
"Air To Live"
"Chemical Plant Protection"
"Energy From Wind, Water and Sun"

8.1.85

"Introduction to Computers II"
"Hartus Cave"
"To See Again"

9.1.85

"Stone Age Tools"
"Ivan Pavlov"
"Inland Water Transport"

10.1.85

"Dewatering By Wellpoint System"
"Jupiter Odyssey"
"Brown Coal In Rhineland"

11.1.85

"Health & Hygiene"
"Heads Or Tails"
"Exploring the Moon"

12.1.85

No Telecast (2nd Saturday)

13.1.85

No Telecast (Sunday)

Sports News

Inter-University Tournaments

Ball-Badminton (Men)

The venue of the next Inter-University Ball-Badminton (Men) Tournament is Anantapur (AP). Sri Krishnadevaraya University is organising this tournament from Jan. 11 to Jan. 17, 1985. The following 26 universities are participating in this tournament:

1. Madras, 2. Marathwada, 3. Kakatheeya, 4. Osmania, 5. Gulbarga, 6. Sri Krishnadevaraya, 7. Bangalore, 8. Mysore, 9. Nagarjuna, 10. Anna, 11. Andhra, 12. Bharathiar, 13. Sri Venkateswara (LSF) 14. Bharathidasan (LSF), 15. Annamalai, 16. Calicut, 17. Marathwada Agrl., 18. J.N.T.U. 19. Gandhijee, 20. Karnataka, 21. Mangalore, 22. Pune, 23. Bangalore Agrl., 24. Madurai Kamaraj, 25. Hyderabad, 26. Kerala (W).

Kho-Kho (Women)

The Inter University Kho-Kho (Women) Tournament will be organised by Saurashtra University at Rajkot from Jan. 12 to Jan. 17, 1985. The following 44 universities have consented to participate :

1. Bombay, 2. Jammu, 3. Magadh-Gaya, 4. Jaipur, 5. Kanpur, 6. Vikram, 7. Nainital, 8. Baroda, 9. S.N.D.T., Bombay, 10. Dharwad, 11. Gandhiji, Kottayam, 12. Sardar Patel, 13. Ranchi, 14. Punjab Agrl., Ludhiana, 15. M.D., Rohtak, 16. Ayurved, Jamnagar, 17. Gujarat, Ahmedabad, 18. Marathwada, 19. Rohilkhand, Bareilly, 20. Jiwaji, 21. Saurashtra, 22. Indore (LSF) 23. Nagpur (LSF,) 24. Raipur, 25. Rani Durgawati, 26. Amravati, 27. Guru Ghasidas, Bilaspur, 28. South Gujarat, 29. Mangalore, 30. Agra, 31. Mysore, 32. Osmania (Hyd) 33. Meerut, 34. Kurukshetra Univ., 35. Delhi, 36. Shivaji-Kolhapur, 37. Gulbarga, 38. Bangalore, 39. Bhopal, 40. G.N.D.U., Amritsar, 41. Panjab, Chandigarh, 42. Punjabi, Patiala, 43. Agri. Univ. Bangalore, 44. Poona.

Madras venue of Vizzy Trophy

The next Universities Cricket Zonal Championship for the Vizzy Trophy will be organised by the Madras University at Madras in collaboration with the Tamil Nadu Cricket Association. The tournament will be held as per the following schedule.

(a) Semi Final—South Vs. North Zone on 4th, 5th & 6th Feb. 1985.

(b) Semi Final—West Vs. East Zone on 4th, 5th & 6th Feb. 1985.

(c) Final—Winners 'a' Vs. Winners 'b' on 8th, 9th 10th & 11th Feb. 1985.

Science & Technology Promotion Programmes of Department of Science & Technology

Introduction

A principal activity of the Department of Science and Technology (DST) is the coordination and promotion of S&T activities in several frontier and newly emerging areas of science and technology. This is done through several programmes/schemes implemented in a coordinised manner by the Science & Technology Promotion (STP) Division of DST. The salient features of the programme operated by STP Division are given below. Scientists and engineers are invited to make full use of the opportunities being provided under these pragrammes....

1. SERC & GRC Schemes for Research Support

The Science & Engineering Research Council (SERC) scheme and the General Research Scheme (GRS) of the department support time bound research projects usually of three years duration in areas which normally do not come under the direct purview of agencies like ICAR, ICMR, UGC, CSIR, etc., and Departments like Atomic Energy, Electronics, Environment, Ocean Development and Space. The objectives of the SERC and GRS schemes are....

(1) SERC: To support frontline research in emerging areas of science and engineering and in interdisciplinary fields. Research programme should be capable of making a significant impact on the scientific scene.

(2) GRS: To provide general research support to scientists on broad basis irrespective of institutions or areas of work so that they would not have to look for assistance from abroad, particularly under specific foreign currency programmes.

2. Thrust Area Programmes (TAPs)

The SERC scheme also encourages research in the identified Thrust Areas through a support mechanism which is more flexible and comprehensive than the one followed for individual research projects. New activities to be supported in Thrust Areas are:

- (i) Coordinated research through Thrust Area Programme (TAP)
- (ii) Setting up of Research Core Groups or Units
- (iii) Training Programmes in identified areas of research, involving Young Seientists
- (iv) Setting up of Support Facilities for research.

TAPs include major research programmes to be undertaken by Indian Scientists from different institutions in a coordinated manner, to enable the creating of a significant impact on the Scientific Scene.

**Note: Thrust Area Booklets in Life, Chemical, Physical & Engineering Sciences are separately available.

3. Intensification of Research in High Priority Areas (IRHPA)

This scheme is designed to provide a major conscious support to a few areas of research that have high priority from the viewpoint of advances in fundamental science or can be of great significance for national development. Intensive research in such areas of high priority is promoted by the following mechanism:

- (a) Building up of a core group around highly competent Scientist.
- (b) Supporting major national R&D programmes involving several institutions and agencies.
- (c) By establishing specialised facilities critically required for carrying out research in high priority areas at the national level.

The mechanism of funding under IRHPA is closely related to SERC.

4. Promotion of Scientific Interest in Youth

To encourage involvement of young scientists (approximately 18-35 years age group) in the national S&T development process and to promote their interest in science, the following activities are supported under the Scheme:

- (1) Small research and development projects and feasibility studies to promote scientific interest in youth.
- (2) Organisation of seminars/symposia on subjects relevant to the promotion and encouragement of scientific interest in youth.
- (3) Travel grants to young scientists for attending Training Courses, Summer/Winter Schools in India and abroad.
- (4) Publications aimed at promoting scientific interest in youth.

5. Assistance to Professional Bodies and Science Academies

The DST has so far been providing limited support to the professional bodies in the field of Science & Technology and to Science Academies (hereafter called societies). A new scheme has been drawn up for specific provision of financial support to the societies in a manner which will enable these

to take on the extended responsibilities of creating a cohesive integrated scientific community through arranging regular meetings and conferences, publishing high quality journals, encouraging meaningful discussions, organising Science exhibitions etc. in a coordinated manner.

6. Support for Seminars & Symposia in Science & Technology

Financial support under the Scheme is provided for organising Conferences and Seminars as well as for publishing their proceedings.

7. Partial Financial Support for Participation in International Conferences

Partial Financial Assistance towards travel is provided to Scientists for atttending international Conferences/Seminars/Workshops etc. The scientists should have an accepted paper for oral presentation in the Conference and/or an invitation to deliver a talk. The Indian National Science Academy (INSA) is already providing such support for Conferences sponsored by International Council of Scientific Unions (ICSU); the support from DST is therefore restricted to only non-ICSU conferences.

8. Futures Research

The objectives of the scheme are to promote research studies on quantitative modelling on various economic and commodity sectors, to examine existing ones and new policy instruments needed in future to foster economic growth through applications of S&T, and also to generate, through seminars and workshops, awareness to application of anticipatory techniques.

9. Scheme for Development of Scheduled Castes and Scheduled Tribes in Science & Technology Areas

This scheme is for the promotion of Technology for occupations engaging Scheduled Castes, Scheduled Tribes, landless labour and linked occupations. It focusses attention on an area of work requiring a special effort not available under the existing ongoing schemes. In particular, under this Scheme, it is proposed to support specific surveys to identify areas and the required technologies, formulate and implement projects to generate the same and promote programmes for field applications and proto-type development.

10. Science & Technology for Women

This Scheme has two major aspects....first relates to the role of Science and Technology in improving the life, working conditions and opportunities for gainful employment for women and the second to the contribution that women can make to the development of S&T and its application.

Under the scheme, it is proposed to formulate an All India Coordinated Project on Development of Technologies to benefit women in general (in reducing drudgery, increasing productivity in their areas of work, opening up of new vocations for them etc.).

11. State Councils on Science & Technology

This Scheme was initiated to catalyse the setting up of State Councils on Science & Technology. The main role of these Councils is to act as focal points in the States for Planning, Coordinating, promoting S&T activities within the State.

12. Regional Sophisticated Instrumentation Centres (RSICs)

The RSICs provide sophisticated instrument & equipment facilities to scientists from educational institutions, R&D Laboratories and industry on nominal charges. Scientists & Engineers are requested to make full use of these opportunities being provided under the DST programmes for S&T promotion.

Seven such centres have been established and are operational at:

(1) Indian Institute of Technology, Bombay
(2) Indian Institute of Technology, Madras
(3) Bose Institute, Calcutta
(4) Central Drug Research Institute, Lucknow
(5) Panjab University, Chandigarh
(6) North Eastern Hill University, Shillong
(7) Nagpur University, Nagpur

(Note : Detailed booklet is separately available)

For details and application forms please contact :

Adviser, Science & Technology Promotion Division
Department of Science & Technology
New Mehrauli Road
New Delhi-110 016
Telephone : **662260**
Telex : **031-2096 DST IN**
Telegram : **SCIENCTECH**

AIU Library & Documentation Services

One of the important functions of the Association of Indian Universities is to act as a clearing house of information on higher education in the country. Towards this end the AIU Library is engaged in collection building and developing instruments for the dissemination of research information. Over the years a valuable collection of books and documents on different aspects of higher education has been acquired.

The Library has also developed Bibliography of Doctoral Dissertations as an effective tool in the dissemination of research information. Retrospective bibliographies covering the period 1857-1970 and 1970-75 were the first to appear. Effective 1975, however, the bibliography is issued annually in two volumes. One volume deals with Natural and Applied Sciences while the other records doctoral degrees awarded in Social Sciences and the Humanities. In addition to the normal bibliographical details like the name of the Research Scholar, the title of the thesis, years of registration for and award of the degree, and the name of the University accepting the thesis for award of a doctoral degree, the bibliography also gives name and complete address of the supervising teacher and an availability note that seeks to inform whether a copy of the dissertation is available for consultation and use in the University Library/Department or Registrar's Office.

The columns 'Theses of the Month' and 'Research in Progress' are intended to cut out the time lag between the receipt of information and its inclusion in bibliography. Such Universities as are not sending us regular information in respect of Doctoral Theses accepted and research scholars enrolled are welcome to make use of these columns.

The Library is situated at 17-B, Indraprastha Marg, New Delhi-110002. It is open from 10 a.m. to 5 p.m. Monday through Saturday except Second Saturday.

RESEARCH IN PROGRESS

A list of Research Scholars Registered for Doctoral Degrees of Indian Universities

SOCIAL SCIENCES

Library Science

1. Batta, Rashmi. *Library science education in India and United Kingdom : A comparative study since* 1947. Pb U, Chandigarh. Dr. U.K. Tikku.

2. Pal, Satnam Singh. *Development of a model for university archives in India.* Pb U, Chandigarh. Prof. Jagdish S. Sharma.

Psychology

1. Brenner, Farrell Stephen. *Yoga psychology: A study of the body-mind relationship using body locations and personality factors.* Pb U, Chandigarh. Dr. Jitendra Mohan.

2. Chopra, Rajni Bala. *Changes in premenstrual tension syndrome as a function of relaxation therapy in relation to personality.* Pb U, Chandigarh. Dr. (Mrs.) Vidhu Mohan.

3. Singh, Anil Kumar. *Role of arousal in attention.* BHU, Varanasi. Dr. I.L. Singh.

4. Singh, Ashok Kumar. *Information process approach to attention.* BHU, Varanasi. Dr. I.L. Singh.

5. Singh, Mahendra Pratap. *Professional training and its psychological correlates.* BHU, Varanasi. Dr. A.P. Singh.

6. Verma, Kamini. *An experimental study of short term and long term memory as determined by motivation, age, sex and sense modalities.* Pb U, Chandigarh. Dr. Jitendra Mohan.

7. Verma, Suman. *Problem solving as related to intelligence and personality in socially deprived and non-deprived children.* Pb U, Chandigarh. Dr. (Mrs.) Vidhu Mohan.

Sociology

1. Brar, Gurbir Kaur. *White collar scheduled caste women workers: A study in role performance, role effectiveness and job satisfaction.* Pb U, Chandigarh. Dr. (Mrs.) K.P. Singh.

2. Kiran Preet Kaur. *Correlates of commitment and professionalization: A study of managers in industrial organisations.* Pb U, Chandigarh. Dr. K.L. Sharma.

3. Monga, Om Prakash. *Sociological aspects of child development in rural areas of district Sirmaur, Himachal Pradesh.* Pb U, Chandigarh. Dr. Amarjeet Mahajan.

4. Pandey, Ghan Shyam. *Manodahik vyaktiyon ka samajik adhyayan.* BHU, Varanasi. Prof. G.P. Dubey and Dr. J.K. Tewari.

5. Singh, Upendra Prasad. *Audyogik sambandh.* BHU, Varanasi. Dr. R.B. Singh and Dr. Vishnu Gopal.

6. Walia, Rashpal. *The problem of untouchability among Sikhs in Panjab with special reference to Mazabhi Sikhs.* Pb U, Chandigarh. Dr. S.L. Malhotra.

Political Science

1. Singh, Manju Kumari. *Gram panchayat-Kaithi gram panchayat : Zila Varanasi ka adhyayan.* BHU, Varanasi. Prof. R.H. Sharan.

Economics

1. Sharma, Rakesh Kumar. *Sources, adequacy and cost of institutional finance to small farmers of Panjab.* Pb U, Chandigarh. Prof. G.K. Chadha.

2. Srivastava, Prakash Chandra. *International trade.* BHU, Varanasi. Dr. G.S. Kushwaha.

Public Administration

1. Grewal, Ramanjit Kaur. *Organisation and working of the Haryana Warehousing Corporation.* Pb U, Chandigarh. Prof. Satya Deva.

2. Panwar, Uday Singh. *Employer-employee relations in the civil services of Himachal Pradesh.* Pb U, Chandigarh. Dr. R.K. Sapru.

3. Sidhoo, Surinder. *A study of the policies for the welfare of scheduled castes and their administration in Panjab.* Pb U, Chandigarh. Dr. S.L. Kaushik.

Commerce

1. Awadhesh Prasad. *A study of public distribution system in Bihar: A management approach.* Patna U. Dr. N.L. Nadda.

2. Azad, Yuvraj Shaw. *Bihar State Electricity Board: A management approach.* Patna U. Dr. N.L. Nadda.

3. Bhale Rao, Asha. *Credit policy of the commercial banks of India.* BHU, Varanasi. Prof. R.A. Singh.

4. Bhatia, Rita. *Evaluation of the working of the Central Warehousing Corporation in India.* Patna U. Dr. Y.P. Verma.

5. Bista, Nirmal Kumar. *Foreign trade in Nepal with special reference to South Asian Countries.* Patna U. Dr. T.P. Maitin.

6. Ganesh, S.S.S. Shiva Durga. *The role of Life Insurance Corporation of India in industrial development in India,* 1971-83. BHU, Varanasi. Dr. M.N. Mishra.

7. Gopal Kumar. *A pattern of industrial development in India during 5 Year Plans.* 1951-84. BHU, Varanasi. Dr. S.N. Wanade.

8. Goyal, Bharat Singh. *Madhya Pradesh ke kendriya sehkari bankon mein sevivargiya prabandh.* Devi Ahilya, Indore. Dr. B.S. Bhandari.

9. Gupta, Lokbardhan. *Evaluation of the working of the Industrial Development Bank of India.* Patna U. Dr. Y.P. Verma.

10. Gupta, Rajendra Pd. *The working of the Bihar State Industrial Development Corporation Ltd.* U Patna. Dr. T.P. Maitin.

11. Gupta, Tribhuvan Pd. *Company taxation in India and its impact on economic development during plan period.* Patna U. Dr. P.N. Sharma.

12. Jha, Ashok Kumar. *Dispersal of industries in Bihar: A case study of the Santhal Pargana District:* Patna U. Dr. Y.P. Verma.

13. Jha, Hira Kant. *Printing industry in Patna.* Patna U. Dr. T.P. Maitin.

14. Jha, Viveka Nand. *Growth of large scale industries in Chottanogpur since independence.* Patna U. Dr. N.L. Nadda.

15. Joshi, Rajendra Prasad. *Organisational structure, its perception and performance appraisal of executives of Arvind Mills, Ahmedabad: A case study.* BHU, Varanasi. Prof. D.P.N. Singh.

16. Kamlesh Kumar. *Taxes on agriculture with special reference to Bihar.* Patna U. Dr. R.K. Pandey.

17. Mishra, Ram Nath. *Evaluation of working of the Bihar State Forest Development Corporation Ltd.* Patna U. Dr. S.N. Sahay.

18. Mishra, Ram Pradeep. *Leadership pattern in public and private sector units of Eastern India: A case study.* BHU, Varanasi. Dr. D.P.N. Singh.

19. Nadda, Jagat Bhushan. *Indo-US economic relations since independence.* Patna U. Dr. S.N. Sahay.

20. Navin Kumar. *The study of the working of the Life Insurance Corporation of India with special reference to Bihar.* Patna U. Dr. Y.P. Verma.

21. Om Prakash. *Pricing and profitability in public enterprises in India.* BHU, Varanasi. Dr. K.M. Pandey.

22. Pandey, Anand Murti. *Imbalance and economic growth: A case study of India.* Patna U. Dr. (Mrs.) Laxmi Jha.

23. Pandey, Vinod Kumar. *Management and working of U.P. State Textiles Corporation.* BHU, Varanasi. Dr. M.B. Shukla.

24. Pathak, Phani Raj. *Financing of industrial sector in Nepal.* Patna U. Dr. S.N. Sahay.

25. Rai, Shiva Shankar. *Finance of development banks of India.* BHU, Varanasi. Dr. V.S. Singh.

26. Sanjeev Nath. *The place of the Bihar State Co-operative Bank in the planned economy of Bihar.* Patna U. Dr. (Mrs.) Bimla Sinha.

27. Shrestha, Man Mohan. *Management of public funds in Nepal.* Patna U. Dr. T.P. Maitin.

28. Shrestha, Mukunda Bahadur. *Development banking in Nepal.* Patna U. Dr. Md. Quddus.

29. Shrestha, Shyam Krishna. *Export market management: A case study of Nepal.* Patna U. Dr. N.L. Nadda.

30. Singh, Chandrashekhar. *Industrial potentials of Ranchi District in Bihar.* Patna U. Dr. Y.P. Verma.

31. Singh, Hari Mangal. *Role of National Bank for Agricultural and Rural Development (NABARD) in providing agricultural credit: A case study of Bihar.* Patna U. Dr. P.N. Sharma and Dr. S.N. Singh.

32. Singh, ijay Bahadur. *Land Development Banking in Bihar.* Patna U. Dr. Y.P. Verma.

33. Sinha, Mrityunjay Pd. *The role of Rural Bank in Bihar with special reference to Bhojpur District.* Patna U. Dr. (Mrs.) Bimla Sinha.

34. Sinha, Shailendra Kumar. *Industrial relations in Bokaro Steel Plant: A case study.* Patna U. Dr. Y.P. Verma.

35. Syed Shaukat Ali. *Commercial banking in rural sector after bank nationalisation with special reference to Bihar.* Patna U. Dr. Md. Quddus.

36. Tiwary, Sanjiv Ranjan. *Managerial problems of Bihar State Road Transport Corporation.* Patna U. Dr. N.L. Nadda.

37. Veena Kumari. *A study of the working and achievements of Bihar State Food & Civil Supplies Corporation Ltd. with special reference to Patna District.* Patna U. Dr. (Mrs.) Bimla Sinha.

38. Yadav, Ram Jiwan. *The role of 20-point programme in the eradication of rural poverty and unemployment with special reference to Patna District.* U Patna. Dr. Md. Quddus.

Home Science

1. Bhan, Rekha. *A survey of job opportunities in home science.* BHU, Varanasi. Prof. (Mrs.) A. Shukla.

2. Raina, Anjina. *Comparison of sociological development nutrition and behaviourable components of school readiness among preschool children in Varanasi and Shivapore* BHU, Varanasi. Prof. (Smt.) A. Shukla.

Management

1. Abid Ali. *Policies and practices of U.T.I.* BHU, Varanasi. Dr. Chhote Lal.

2. Mishra, Charak. *Marketing policies and practices in medium scale industries of Orissa: A study of ipicol assisted units.* BHU, Varanasi. Dr. Abrar Ahmed.

3. Singh, Arvind Kumar. *Capital budgeting in joint stock companies in India.* BHU, Varanasi. Dr. Chotte Lal.

4. Singh, Uma Shankar. *Financial structure of engineering industry of India.* BHU, Varanasi. Dr. R.M. Srivastava.

HUMANITIES

Philosophy

1. Koshin, Hemmi. *Madhyamica philosophy.* BHU, Varanasi. Prof. L.N. Sharma.

Language & Literature

1. Frederick Mony, S. *Mythological tales in Kanyakumari District: A structural study.* U Ker, Trivandrum. Dr. N. Bhakthavalsala Reddy.

2. Manoj Kumar, K. *The study of place names in Ernakulam District.* U Ker, Trivandrum. Dr. N. Bhakthavalsala Reddy.

English

1. Jaysree, G.S. *Hardy and Larkin and the native tradition of British poetry.* U Ker, Trivandrum. Dr. N. Viswanathan.

2. Pradeep, V.K. *The loneliness with in a study of W.H. Auden, Thomgunn and Sylvia Plath.* U Ker, Trivandrum. Dr. N. Viswanathan.

3. Swinder Paul. *Myth, ritual and archetype in modern Indian drama: A study of selected plays.* Pb U, Chandigarh. Dr. C.L. Ahuja.

German

1. Krishnamoorthy, Indira. *The portrayal of women in Peter Handke's works.* U Ker, Trivandrum. Dr. Bernard Fenn

Sanskrit

1. Ganguly, Sathi. *Torka Sangrah ke sandarbh mein Janardan evam Annam-Bhatt ka tulnatmak adhyayan.* BHU, Varanasi. Prof. Sita Ram Shastri and Dr. R.S. Chaturvedi.

2. Singh, Rekha. *Vaidik Danstutiyan : Ek sameekshatmak adhyayan.* BHU, Varanasi. Dr. S.N. Pandey and Dr. B. Bhattacharya.

3. Tiwari, Rajender Prasad. *Sanskrit sahitya mein Parshuram Charitra.* HS Gaur, Sagar. Dr. R.V. Tripathi.

4. Verma, Anita. *Manviya mulyon ke sandarbh mein Kalidas.: Ek adhyayan.* BHU, Varanasi. Dr. S.N. Pandey and Dr. R.P. Dwivedi.

Punjabi

1. Kulbir Kaur. *Depiction of women in punjabi short story, with special reference to post-independence period.* Pb U, Chandigarh. Dr. Raghbir Singh.

Hindi

1. Atma Nand. *Acharya Hazari Prasad Dwivedi ke sahitya per sanskrit ka prabhav.* MDU, Rohtak. Dr. Ram Bux.

2. Chandrika, P. *The novels and short stories in hindi of South India: A critical analysis.* U Ker, Trivandrum. Dr. N. Chandrasekharan Nair.

3. Jayalakshmi. *Jainendra evam Chalam ka upanyas sahitya: Tulnatmak vivechan.* DBHPS, Hyderabad. Dr. Usha Lavanya.

4. Kanta Kumari. *Hindi Gujarati sant sahitya ke darshnik paksha: Tulnatmak drishti.* DBHPS, Hyderabad. Dr. Chandra Bhanu Rawat.

5. Kuttappan Nair, K.C. *Cultural analysis of Nayikavitha from its inception to 1960.* U Ker, Trivandrum. Dr. N.E. Viswanatha..

6. Mahilamony, J. *A comparative study of the philosophical and devotional aspects of the poetical works of Tulsi Das and Sree Narayana Guru.* U Ker, Trivandrum. Dr. Vellayani Arjunan.

7. Naryan, G. *Swachchhandatavad, telugu bhav-kavita tatha hindi chhayawad mein samajik madhyavargiya chetna.* DBHPS, Hyderabad. Dr. C.B. Rawat.

8. Rai, Subhash Chandra. *Madhyakalin itihasik drishti aur hindi reetikalin prabandh kavya.* BHU, Varanasi. Dr. Ibha Gupta.

9. Shantaiya, M. *Hindi pareebhashik shabdavali: Samasyaen evam samadhan.* DBHPS, Hyderabad. Dr. Dilip Singh.

10. Sharma, Anand Vardhan. *Sur-Kanya kee manovaigyanik prishtha-bhumi.* MDU, Rohtak. Dr. H.C. Verma.

11. Sreelatha, R. *A comparative study of the Ramakavya in modern hindi and malayalam literature.* U Ker, Trivandrum Dr. Vellayani Arjunan.

12. Subhani, Mehboob. *Dhruvaswamini: Shailivaigyanik adhyayan.* DBHPS, Hyderabad. Dr. Dilip Singh.

13. Sudharmma, A.K. *A comparative study of the characters in the historical novels of Vrindavanlal Verma and C.V. Raman Pillai.* U Ker, Trivandrum. Dr. Vallayani Arjunan.

14. Sujata. *Premchandottar hindi-telugu upanyas lekhikaon kee jeevan drishti.* DBHPS, Hyderabad. Dr. Usha Lavanya.

15. Usha Wanti. *Hindi ke vyangya nibandh : Kathya Evam Shilp,* 1950-1975. MDU, Rohtak. Dr. (Mrs.) Pushpa Bansal.

16. Vishwanath, H. *Andhra Pradesh kee hindi: Trutivishleshan, Hyderabad Nagar: Ek samajbhashavaigyanika adhyayan.* DBHPS, Hyderabad. Dr. Dilip Singh.

Urdu

1. Feroz Hussain Haji. *Urdu Ghazal, from Hali to 1960.* HS Gour, Sagar Dr. M.S. Siddiqui.

2. Syed Farookh Hussain. *Urdu mein khaka nigoria ka tanqidi jaiza.* HS Gour, Sagar. Dr. M.S. Siddiqui.

3. Syed Shakiluddin Kazi. *Maulana Zafar Ali Khan as a poet.* HS Gour, Sagar. Dr. Mohammad Safi.

Persian

1. Mehdi, Syed Mustafa. *Some famous persian poets of Banaras.* BHU, Varanasi. Prof. A.L. Ishrat.

Geography

1. Jagtar Singh. *Spatial organisation of agriculture in an area around Jullundur City (Panjab) : A Von Thunen's interpretation.* Pb U, Chandigarh. Dr. Jhujar Singh.

History

1. Mudgal, Tara. 1857 *mein swadheenta sangram mein Bundelkhand kee bhoomika.* Devi Ahilya, Indore. Dr. (Mrs.) K. Ganguli.

2. Ram Singh. *Administration of police and jails in the Panjab,* 1861-1947. Pb U, Chandigarh. Dr. C.L. Datta.

3. Sharma, Subhadra. *Bhootpoorva Gwalior Rajya mein jagirdari vyavasthayen,* 1933-1947. Devi Ahilya , Indore. Prof. I.S. Mehta.

4. Walia, Rakesh. *The hill tribes of Arunachal Pradesh.* Pb U, Chandigarh. Dr. (Mrs.) Saroj Chakravarty.

THESES OF THE MONTH

A list of Doctoral Theses Accepted by Indian Universities

SOCIAL SCIENCES

Library Science

1. Mahapatra, Manoranjan. *Growth of literature and citation pattern among the Indian journals in the field of Botany.* U Burdwan.

2. Seetharama, Sistla. *Compatibility among medical classification systems: A case study in the classification of cardivascular diseases.* Kar U, Dharwad.

Psychology

1. Bhaumik, Gita. *Juvenile delinquency : A study of some psychological correlates.* U Calcutta.

2. Chattopadhyaya, Gurupada. *An investigation into the effects of certain cognitive and styles and cognitive abilities on strategies of concept attainment.* Bangalore U.

3. Dharanendriah, A.S. *A study of occupational interest patterns of scientists.* U Mysore.

4. Goswami, Akhilesh Kumar. *Hindi shabdon ke vachik adhigam mein jipf ke nyuntam prayas niyam ke stayapan hetu ek prayogik adhyayan.* U Gorakhpur.

5. Gowri Rammohan, Vesula. *Studies on ESP performance in class room and academic examination sittings.* Andhra U, Waltair.

6. Singh, Rajeshwar Prasad. *Under over academic achievement and its motivational correlates (A factor analytic study)* Avadh U.

Sociology

1. Bobtagi Raju, Maparthi Christ. *A functional analysis of voluntary associations of major linguistic groups in Nagpur.* Nagpur U.

2. Venkata Ramana, Vempadapu. *Alienation job satisfaction and occupational values of college teachings: A multiphase multivariate exploratory analysis.* Andhra U, Waltair.

3. Vaja, Manharkunverba U. *College youth and todays politics: A sociological research.* Bhavnagar U.

Political Science

1. Agnihotri, Snehlata. *Evolution of Municipal Administration in Murwara Katni.* RDV, Jabalpur.

2. Baishya, Khagendra Nath. *Financial administration in Assam since independence*. Gauhati U.

3. Dave, Abhay Kumar. *Development of administrative thought in the United States*. HS Gour, Sagar.

4. Goswami, Dharni Dhar. *Administration of Public Works Department of Assam*. Gauhati U.

5. Pandey, Nagendra Nath. *Kautilya shasan vyavastha mein Raja kee bhumika*. Avadh U.

6. Prem Chandra. *Bhoomiheen krishi majdooron ka samajik, arthik evam rajnaitik vivechan: Gonda janpad ka ek adhyayan*. Avadh U.

7. Rajiva Lochan. *Rural leadership in developing society: A close study of grass root level in India*. Mag U, Bodh Gaya.

8. Singh, Rama Prasad. *The big powers attitudes towards third world*. Mag U, Bodh Gaya.

9. Singh, Urmila. *Bhartiya rajnaitik vyavastha tatha istri matdata: Gonda Jile ka ek adhyayan*. Avadh U.

Economics

1. Ahuja, Harbans Lal. *Developmental strategy in a labour surplus economy, with special reference to India*. U Delhi.

2. Bandyopadhyay, Hirankumar. *A study in dualisms in a developing economy, with special reference to India*. U Calcutta.

3. Chakraborti, Sushanta Kr. *The role of rural credit for agricultural development in the post-independence period in the hill areas of Darjeeling District, West Bengal*. NBU, Raja Rammohanpur.

4. Dadibhavi, Rudrappa Veerappa. *Inter-district variations in income productivity and industrial structure in Karnataka*. MSU, Baroda.

5. Das, Kumarbar. *Economics of Indian Cement Industry*. Utkal U, Bhubaneswar.

6. Khan, Sakiya. *India's balance of payments since independence*, 1947-77. Gauhati U.

7. Madhavasang Sahebsang Raj. *Financial intermediation in economic development, institutions, assets and yields with special reference to India*. SPU, Vallabh Vidyanagar.

8. Mohammad Niamuddin. *Structure of flow of capital funds in India*. MSU, Baroda.

9. Pany, Raj Kishore. *Institutional credit for agriculture in Orissa since* 1969. Utkal U, Bhubaneswar.

10. Seleh, Swabora Islam. *Nagaland's economy in transition since* 1964. Gauhati U.

11. Tippa Reddy. *Wages productivity and distribution in Indian Industry*, 1960-77. OU, Hyderabad.

12. Tripathi, Shiv Kishore. *Inflation and economic development in India, during the first two decades of the plan period*. Avadh U.

Law

1. Arun Kumar. *The Supreme Court : Cultural and educational rights of the minorities under the Constitution of India*. U Delhi.

2. Bawel, Basantilal. *Dandik karyavahiyon mein police anveshan*. Vikram U, Ujjain.

3. Jayakumar N.K. *Limitations on judicial decision making: A study in the Indian context*. U Ker, Trivandrum.

Public Administration

1. Ramachandran, D. *Andhra Pradesh Housing Board: A study of organisation, functions and working with special reference to twin cities*. OU, Hyderabad.

2. Raghava Rao, M.V. *Khadi and Village Industries Commission: An organisational study*. Utkal U, Bhubaneswar.

Military Science

1. Singh, Bhawani Sevek. *Mizoram ka bhoo rajnitik evam stratijikiya adhyayan*. Avadh U.

Education

1. Baby Prasanna, K.C. *A study of certain mental health variables associated with high and low achieving adolescents*. U Ker, Trivandrum.

2. Bilquis, Fatima. *The role of private enterprises in education with special reference to muslim educational organisations in Karnataka: A historical survey*. Kar U.

3. Chitriv, Uddhao Gopalrao. *Evaluating differential effectiveness of Ausubel and Bruner strategies for acquisition of concepts in Mathematics*. Nagpur U.

4. Dass, Prettyrose Arthur. *A study of reading comprehension in english of students of english medium secondary schools of standard X of Central Gujarat in the context of some socio-psycho factors*. SPU, Vallabh Vidyanagar.

5. Ekbote, Narayan Trimbakrao. *A linguistic analysis of Marathi language text books prescribed by the Board for classes I to Xth in Maharashtra*. Nagpur U.

6. Elanjimannil, John Chacko. *An explanation of explanation*. U Ker, Trivandrum.

7. Jaman, G.S. *A study of social, religious and moral values of students of class XI and their relationship with character traits and personality adjustment*. Avadh U.

8. Mehta, Ganesh Lal. *A study of role conflicts of teachers*. MSU, Baroda.

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KAMLA NEHRU INSTITUTE OF TECHNOLOGY

SULTANPUR-228118 (U.P.)

Advt. No.:- Coaching 2/84

PRE EXAMINATION COACHING OF SC/ST CANDIDATES FOR COMBINED ENGINEERING SERVICE EXAMINATION

A pre-examination coaching Centre for SC/ST candidates for combined engineering services examination has been started by Ministry of Home Affairs, Government of India under the auspices of Avadh University at Kamla Nehru Institute of Technology, Sultanpur. Applications are invited for 40 seats for coaching of candidates appearing for Combined Engineering Service Examination. Three seats out of 40 shall be reserved, one each for the following categories:

(a) The candidates who does not belong to Scheduled Caste but whose Parents/Guardians are employed as sweepers and scavangers.

(b) The Candidates who belong to denotified nomadic/Semi-nomadic communities.

(c) The candidates who belong to New Budhists.

QUALIFICATIONS

The Candidates would be selected on the basis of merits and should satisfy the following requirements:

(i) They should be graduates in Civil, Electrical, Mechanical Engg.

(ii) They should not be more than 32 years and less than 20 years in age on Ist January, 1985.

(iii) Their combined income from all sources including those of parents shall not exceed Rs. 1,000.00 P.M.

(iv) They should not belong to a family, two members of which have already received coaching under the coaching and allied schemes.

(v) They should not have received coaching before, in any pre-examination training centre established by the Ministry of Home Affairs, Government of India.

FACILITIES

Selected candidates will be provided coaching in Civil, Mechanical, Electrical Engineering branches.

(ii) The candidates admitted to the coaching will be provided free tuition and a stipend of Rs. 280/- per month towards boarding, lodging and other incidental expenses during the period of coaching at K.N.I.T., Sultanpur.

Applications on plain paper giving all relevant informations must reach K.N.I.T. Sultanpur latest by **14th January, 1985.** The coaching classes are likely to begin by **21st January, 1985.** The applications must accompanied by the SC/ST certificate duly issued by competent authority like Deputy Commissioner/Collector, Deputy Collector, Tehsildar etc. and other supporting documents.

Candidates will be informed about their selection through Institute Notice Board and News Papers i.e. (i) Hindustan Times (ii) University News (iii) Times of India.

Dr. S. Prasad
DIRECTOR

KAMLA NEHRU INSTITUTE OF TECHNOLOGY

SULTANPUR (UP)
PIN-228118

Advertisement No. 4/84

Applications are invited for the following Teaching, Technical Supporting and Non-Teaching Posts.

A. Teaching Posts

1. Professor

Pay Scale : Rs. 1500-60-1800-100-2000-125/2-2500.

1. **Electronics Engg:** One Post (Permanent).

2. **Computer Science :** One Post (Permanent).

Qualifications

An eminent Scholar with published work of high quality actively engaged in Research. Ten years experience of Teaching and/or research experience of guiding research at Doctoral level.

OR

An outstanding Engineer/Technologist with established reputation who has made significant contribution to knowledge.

Desirable

Professor (Electronics Engg.)

Should be engaged or have rich contribution in the field of Microprocessor, Micro Electronics Digital Techniques, Microwaves.

Professor (Computer Science)

Should have working knowledge of III or IV generation Computer. Should be proficient in higher language such as PASCAL, COBOL, FORTRAN, Pl 1, OR BASIC. Should be conversant with VLSI and Mini Micro Computer Organisation.

2. Assistant Professor

Pay Scale : Rs. 1200-50-1300-60-1900.

1. **Civil Engg:** One Post (Permanent).
2. **Mech. Engg:** One Post (Permanent).
3. **Computer Science:** Two Posts (Permanent).
4. **Electrical & Electronics Engg.:** Two Posts (One or two additional vacancies are likely to fall vacant at the time of interview).

Specializations

Civil Engg: Hydraulics/Water Resources Engg/Environmental Engg.

Mech. Engg: Productoin Engg/Design/Industrial Engg.

Computer Science: The candidates should be specialised in Hardware, Software or Microprocessor Working alongwith the published work.

Electrical & Electronics Engg: The candidates should be specialised in Micro Electronics, Electronics, Information Theory & Digital Electronics.

Qualifications

(Civil/Mechanical/Computer Science/Electrical & Electronics) : A good academic Record with a Doctors' Degree in a relevant field. About 5 years experience of Teaching and/Or Research and Development.

Provided further that candidate not possessing Ph.D. may be considered if they have to their credit equivalent research published work or design/development work of a high order either in the Institution on/or in an industry.

OR

In the case of persons to be recruited from industry or professional fields, candidate should possess good academic record with recognised professional work of about 7 years which should include innovation and/or research and development.

Lecturers

Pay Scale : Rs. 700-40-1100-50-1600.

1. **Civil Engg:** Three Posts (Permanent)
2. **Mech. Engg:** One Post (Permanent).
3. **Electronics Engg:** Two Posts (Permanent).
4. **Electrical Engg:** Three posts (Permanent).
5. **Computer Science :** Two Posts (Permanent).
6. **Applied Science & Humanities:** One Post (in Physics) (on Leave Vacancy).

Note: Two or three additional vacancies in the Engg. discipline, i.e. Civil, Mech. Electrical & Electronics are likely to fall vacant at the time of interview.

Specialization

1. **Civil Engg. :** Environmenta lEngg./Structural Engg.
2. **Mech. Engg. :** Design/Production Engg.
3. **Electronics. Engg. :** Electronics/Power Electronics/Communication.
4. **Electrical Engg. :** Electrical Machines/Controls/Power System OR System Engg.
5. **Computer Science :** Computer Science / Micro-Electronics / Electronics/Information Theory and Digital Electronics.
6. **Applied Science and Humanities:** Physics.

Qualifications

(For Civil/Mechanical/Computer Science/Electrical & Electronics Engg):

(A) Master's Degree in appropriate fields in Engineering and Technology.

(B) Consistently good academic records with a Bachelors' Degree in Engineering/Technology. 1st Class at Bachelor's Degree/or Master Degree level.

(C) One years' relevant professional experience outside academic/research Institution.

If candidates with M.Tech./M.E. qualifications are not available or M. Tech./M.E. are not found suitable for appointment, essential qualification may be relaxed and the institution may appoint First Class Engineering graduates against the posts of Lecturers. Such relaxation, however, will be subject to the condition that the candidates concerned shall have to obtain M.Tech/M.E. degree within a period of five years failing which they shall not be entitled for drawing further increments.

For Applied Science and Humanities

(A) A Doctorate Degree in the Physics or published work of a high standard in the above subject; and

(B) Consistently good academic record (that is to say the overall records of all assessments throughout the academic career of a candidate) with First Class or High Second Class (that is to say, with an aggregate of more than 54% Marks. Master's Degree in Physics or equivalent degree of a foreign University in the Subject.

B. Technical Supporting Posts

1. **Senior Instructor (Workshop):** One Post (on Leave Vacancy)

Pay Scale : Rs. 570-25-770-EB-30-980-30-1100.

Qualifications

Diploma in Mech. Engg. from the recognised Institution with Ist Class or High Second Class.

Experience

Five years experience in Shop Floor in Foundary/Die Making.

2. **Junior Instructor (Mechanical)** One Post (on Leave Vacancy)

Pay Scale : Rs. 550-18-640-20-680-EB-20-740-25-865-EB-25-940.

Qualifications

Diploma in Mech. Engg./Automobile Engg. from the recognised Institution with Ist Class or High Second Class.

Experience

Two years experience in setting up and maintenance of various laboratories of Mech./Engg/Industry.

3. **Console Operator and System Assistant:** One Post.

Pay Scale : Rs. 570-25-770-30-980-EB-30-980-EB-1100.

Qualifications

The candidates should be Diploma in Electronics/Computer Science/Electrical with five years total experience in doing working Computer or Electronics Installation or Digital Instruments.

Desirable

Knowledge of Basic/Fortran/Pascal/Cobal programming language.

4. **Data Feeder and V.D.U. Assistant:** Two Posts.

Pay Scale : Rs. 550-18-640-20-680-EB-740-25-865-EB-25-940.

Qualifications

The candidates should be Diploma in Computer/Electronics/Electrical in First Division having one year Experience.

Desirable

Should have working knowledge of Digital Computer. Should be able to handle the V.D.U.terminals independently. Should have knowledge of BASIC/FORTRAN/COBAL/PASCAL.

5. **Hard Ware System Assistant :** One Post.

Pay Scale : Rs. 470-15-575-EB-15-650-17-701-EB-17-735.

Qualifications

Should have passed High School, and Certificate from I.T.I. in Electronics. He should have experience of five years.

Desirable

Working knowledge of CRO Repair, Computer line diagrams Study and faults finding technique.

C. Non-Teaching Post

1. **Junior Clerk/Typist:** One Post.

Pay Scale : Rs. 354-10-424-EB-10-454-12-514-EB-12-550.

Qualifications

Intermediate with good knowledge of Hindi/English typing with minimum speed of 35/40 W.P.M.

Desirable

Knowledge of Shorthand in English/Hindi with some office working Experience.

Applications typed or legibly hand written accompanied with attested copies of certificates, testimonials and Marksheets of all examinations passed together with a crossed postal order of Rs. 10/- for Teaching Posts i.e. at Sr. No. 1 to 3 and Rs. 5/- for other posts drawn in favour of DIRECTOR of the Institute should reach this office upto **15-1-85**. The employed candidates should apply through proper channel. Advanced copy of applications can be considered provided the original applications duly forwarded is received before the date of the Interview.

2. Higher start may also be considered for highly qualified candidates.

3. In special circumstances requirements of the qualifications can be relaxed by the Selection Committee.

Dr. S. Prasad
DIRECTOR

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INDIAN INSTITUTE OF SCIENCE

BANGALORE-560012

Advertisement No. R(IA) 308-49/84

Dated : 18th December, 1984.

Applications in the prescribed form are invited for the post of LECTURER in the Department of Metallurgy at the Institute in the grade Rs. 700-40-1100-50-1600 plus allowances at the Central Government rates prevailing at the Institute from time to time. Emoluments at the minimum of the scale total to Rs. 1885.95 per month including House Rent Allowance.

Qualifications and Experience

Essential

Ph.D. Degree in Metallurgy with specialization in extractive metallurgy.

Desirable

Post-doctoral experience with evidence of potential for original research, supported by published work.

Job Description

The selected candidate will be required to take part in teaching and Laboratory work, participate in the existing research programmes in the area of extractive metallurgy.

Relaxation

The stipulation regarding qualifications and the number of years of relevant experience is relaxable at the discretion of the competent authority in the case of candidates possessing exceptionally good record and outstanding capabilities.

Tenure of Appointment

Normally, all new appointments at the Institute are made on contract for a period of five years including an initial probationary period of one year. If, at the end of the first contract, the work and progress of the candidate is found satisfactory, the Institute may consider offering a continuing appointment till the age of superannuation, i.e. 60 years.

General

Application forms (six copies) can be obtained from the Registrar, Indian Institute of Science, Bangalore-560012, on requisition. Each request for application forms should be accompanied by a crossed Indian Postal Order for Rs. 5/- (non-refundable) made payable to the Registrar, together with a self-addressed stamped (Rs. 3.30) envelope of the size of 28cms × 18cms. The payment of application fee is exempted in the case of candidates belonging to Scheduled Castes/Scheduled Tribes on production of caste certificate from a competent authority.

The last dates are:

(a) For issue of application forms : **18th January, 1985.**

(b) For receipt of completed application forms : **5th February, 1985.**

Applicants in the service of Government, Quasi-Government, Government-aided or similar institutions should apply through proper channel. Otherwise, their applications will not be considered

It shall be open to the Selection Committee for a higher post to recommend a person for a lower post if a suitable candidate for the higher post is not available.

Due consideration will be given to candidates who are physically handicapped provided they are academicalyl/scientifically sound and well qualified and generally comparable to others.

Higher starting salary may be considered to candidates with exceptional merit.

Kindly quote the advertisement No. and date in all correspondence. Candidates should ensure that applications are complete in all respects.

Detailed terms and conditions of appointment will be supplied along with the application forms.

T. Nanjunda Rao
REGISTRAR

RANI DURGAVATI VISHWAVIDYALAYA

JABALPUR

No. Estt/84/89 **Dated : 14-12-1984**

ADVERTISEMENT

Applications in the prescribed form (in 8 copies) are invited for the following posts so as to reach the undersigned on or before **24-1-1985**.

S. No.	University Teaching Department of	No. of Posts vacant		
		Professor	Reader	Lecturer
1.	Law	1	—	2
2.	Journalism & Mass Communication	—	1	—
3.	Biological Sciences	—	1	1
4.	Economics	—	2	2
5.	Political Sciences	—	2	—
6.	Chemistry	—	—	1
7.	Philosophy	—	—	2
8.	Sanskrit	—	—	1

2. Pay Scales of the Posts are:

(i) Professor — Rs. 1500-60-1800-100-2000-25/2-2500.
(ii) Reader — Rs. 1200-50-1300-60-1900.
(iii) Lecturer — Rs. 700-40-1100-50-1600.

3. The minimum essential qualifications for these posts are exactly the same as are prescribed by the University Grants Commission.

4. The prescribed application forms (in 8 copies) together with details of qualifications, Specialization, etc. can be obtained from the undersigned on payment of Rs. 5/- in person or by sending a crossed postal order of Rs. 5/- payable to the Registrar, Rani Durgavati Vishwavidyalaya, Jabalpur. The candidates who desire to get the application form by Registered post (not by ordinary post) should send an additional amount of Rs. 5/- by postal order for postal expenses.

5. The candidates who had applied earlier for the posts of Readers in Political Sciences, Lecturers and Professor in Law in response to advertisement Nos. Estt/83/970, dated 28-12-83 and Estt/84/108, dated 28-5-84 and Reader in the Deptt. of Journalism & Mass Communication in response to advertisement No. Estt/84/118, dated 8-2-1984 need not apply again but they must intimate to the University on or before 24-1-1985 whether they wish their applications to be considered. They may also intimate any additional qualifications, experience, etc. that they may have acquired during this time.

6. The University reserves the right to fill in or not to fill in any post and also to call any candidate for interview.

R.N. Tripathi
REGISTRAR

CENTRAL INSTITUTE OF ENGLISH AND FOREIGN LANGUAGES

HYDERABAD-500007

Advertisement No. IX/84

Applications on the prescribed form together with the application fee are invited for the following posts at the Institute (in the EMRC set-up by the UGC at the Institute and for the Institute Service) so as to reach the undersigned on or before **31st January, 1985**.

I. **Engineer-in-Charge (EMRC) :** One Post.

Scale of Pay : Rs. 1200-50-1300-60-1900.

Qualifications

(i) B.E./B.Tech. (Electronics) or M.Sc. (Physics) with Electronics as a special subject from a recognised University/Institution OR equivalent with five years experience in the field of TV Broadcasting.

OR

(ii) M.E./M.Tech. (Electronics) with three years experience in the field of TV Broadcasting.

II. **Reader (Programmes) :** One Post.

Scale of Pay : Rs. 1200-50-1300-60-1900.

Qualifications

Essential

Good academic record with a Doctoral degree or equivalent published work. Evidence of being actively engaged in (i) Research OR (ii) Innovation in teaching methods OR (iii) Production of teaching materials.

About five years experience of teaching and/or research provided that atleast three of these years were as Lecturer or in an equivalent position.

This condition may be relaxed in the case of candidates with outstanding record or Teaching/Research.

Subject concerned or allied subject: English/Communication.

Desirable

Atleast five years experience in either (i) Radio/TV programme production for Language teaching or (ii) Radio/TV programme production for language teaching and the teaching of courses involving such programme production with considerable outstanding production credits.

III. **Assistant Engineers :** Two Posts.

Scale of Pay: Rs. 700-40-1100-50-1600.

Qualifications

B.E. (Electronics) OR M.Sc. (Physics) with Electronics from a recognised University/Institution or equivalent with two years experience in the field of TV Broadcasting.

IV. **Producers :** Three Posts.

Scale of Pay : Rs. 700-40-900-EB-40-1100-50-1600

Qualifications

Degree or Diploma of a recognised Institute in Cinema Direction OR in Developmental Communication OR Degree atleast second class of a recognised University or equivalent qualification and Three years experience of Direction in Television/Film Production.

V. **Assistant Librarian :** One Post.

Scale of Pay : Rs. 700-40-1100-50-1600.

Qualifications

(a) Good academic record with atleast a high second class Master's Degree in a subject other than Library Science.

(b) Master's Degree in Library Science with first class or High Second Class.

VI. **Cameramen :** Three Posts.

Scale of Pay : Rs. 650-25-750-EB-30-900.

Qualifications

Diploma/Degree in Cinematography or equivalent qualification from a recognised University/Institute.

VII. **Production Assistants :** Three Posts.

Scale of Pay : Rs. 550-25-750-EB-30-900.

Qualifications

Degree in Dramatics or Diploma of National School of Drama or equivalent Diploma of a recognised University/Institute OR Graduate OR equivalent and atleast two years experience of Programme Production Assistant in Films/TV/Theatre or Radio. OR Degree in any discipline with atleast second class of a recognised University and two years experience of educational research/evaluation/production of A.V.M.

VIII. **Graphic Artist :** One Post.

Scale of Pay : Rs. 550-25-750-EB-30-900.

Qualifications

SSC with five years diploma course in Art OR SSC with three years experience as Assistant Graphic Visual Artist.

IX. **Programme Assistant (Photography):** One post.

Scale of Pay : Rs. 550-25-750-EB-30-900.

Qualifications

Essential

(i) Atleast a second class Degree from a recognised University with high level competence in English.

(ii) A diploma from Film and Television Institute of India, Poona Or a certificate from TV Training Centre or a degree/diploma in Journalism and communication or a diploma from National School of Drama or specialised training in English or Foreign Language teaching through mass media in a recognised Institute.

(iii) Atleast two year's experience as Radio/TV Production Assistant.

Desirable

(i) At least three year's Teaching experience in a school or college.

(ii) Proficiency in one or more Indian and Foreign Languages.

Age for all the posts not below 18 years and not above 35 years. Age is relaxable in deserving cases.

The persons appointed will be entitled to allowances at Central Government Rates.

All the above posts except at serial Nos. V and IX are temporary, but likely to continue.

Due consideration will be given to candidates belonging to SC/ST.

Candidates called for interview for posts at Sl. Nos. I to V from a place outside Hyderabad will be paid a contribution towards their travelling expenses at the rate of second class railway fare including sleeper coach charges from the place of their work or residence, whichever is nearer by the shortest route, subject to the production of a railway receipt.

Candidates who are already employed should forward their applications through their employers.

A copy of the application form can be had from the Registrar, Central Institute of English and Foreign Languages, Hyderabad-500007 on payment of Rs. 2/- and for SC/ST 0.50ps. only in person or by Postal Order payable to Registrar", CIEFL, and by sending a self addressed envelope (10× 23 cms) duly stamped ordinary (0.70 ps) or for Regd. Post (Rs. 3.45) indicating the name of the post applied for.

K. Jayashankar
REGISTRAR

UNIVERSITY OF MYSORE

Mysore Viswavidyanilaya Karya Soudha, Crawford Hall,
MYSORE-570005

Advt.No. D6-649/84-85
Dated : December 18, 1984.

CORRIGENDUM

Sub: Advertisement No. D6-694/84-85 Dated 5-12-1984 relating to several teaching/non-teaching posts in the University of Mysore.

Ref : 1. Publication of the above advertisement (a) on page 4 of Hindu dated 11-12-1984 and (b) Prajavani dated 11-12-1984.

The following corrections are issued to the above advertisement :

(1) The qualification for the post of Professor of Kannada in the Postgraduate Department of Kannada may please be read as Specialisation in Halagannada Sahitya or Paschatya Kavya Vimarse".

(2) One post of Reader in English (Sl. No. 1) and one post of Lecturer in Statistics (Sl. No. 8) in the Institute of Correspondence Course and Continuing Education, Manasagangotri, Mysore-6 are withdrawn from the above advertisement and hence applications for those posts need not be sent.

REGISTRAR

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University
News

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22nd Convocation of IIT Bombay

Shri D.V. Kapur, Secretary, Ministry of Heavy Industry, Govt. of India, & Chairman, Board of Governors of IIT Bombay, presenting the degree of Doctor of Science (Honoris Causa) to Dr. Raja Ramanna, Chairman, Atomic Energy Commission and former Chairman, Board of Governors of IIT Bombay.

UNIVERSITY OF NORTH BENGAL

F. 22/Advt./Estt./21/R-84

Dated : 21-12-84

Applications in prescribed forms are invited for the following posts:

(A) Professor: One each in Mathematics (Specialisation: General Topology/Functional Analysis/Algebra), Political Science (Specialisation: Politics of Development), Economics (Specialisation: Regional Development).

(B) Reader in Political Science (Specialisation: Political Thought/Theory) : Post one.

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Choice of Selection Committee may not necessarily be confined to those who apply formally. No application except in prescribed application forms may be considered.

Prescribed application forms may be obtained from the office of the Registrar personally on payment of Rs. 5/- (Rs. 3/- for S.C./S.T.) in cash at the University Cash Counter or by sending a self-addressed stamped of Rs. 1.40 envelope of 25×13 cms. with crossed I.P.O./Bank Draft of Rs. 5/- (Rs. 3/- for S.C./S.T.) in favour of the University of North Bengal. Filled in application forms (6 copies) along with one self-addressed unstamped envelope must reach the office of the Registrar, P.O. North Bengal University, Dist-Darjeeling, Pin : 734430 on or before **31-1-1985.**

REGISTRAR

THE UNIVERSITY OF KASHMIR

SRINAGAR

Advt. No. F. 10 (App-Gen) Ku/84

Dated : 28-12-1984

Applications on the prescribed form which should be accompanied by a postal order drawn in favour of the Registrar cashable at Srinagar Post Office or University Voucher, of the value of Rs. 5/- to reach the Registrar by **January 25, 1985** are invited for the following posts:

Reader in the Pay Scale of Rs. 1200-1900 for Centre of Research for Development and Institute of Home Science.

Lecturer in the Pay Scale of Rs. 700-1600 for Economics and English (leave vacancy).

The prescribed application forms can be had from the University Office on cash payment of Rs. 15/- or by sending a crossed postal order drawn in favour of the Registrar of this University cashable at Srinagar Post Office alongwith a self-addressed envelope (5″×11″) with the necessary postage.

Candidates are advised in their own interest to send their detailed curriculum vitae in advance.

Details in respect of qualifications etc. prescribed for the posts can be had from this office.

Mohd. Shafi Khan
DEPUTY REGISTRAR (Admn.)

THE UNIVERSITY OF KASHMIR

SRINAGAR

NO: F. 10(App-Gen) Ku/84
University Campus,
Hazratbal, Srinagar-6

Dated : Dec. 22, 1984

NOTICE

The last date for receipt of applications for the below mentioned posts advertised vide this Office Advertisement Notice of even number dated 10-11-1984 is extended upto and including 15-1-1985.

(i) Professor in Botany, English, Education and History.

(ii) Director for Centre of Central Asian Studies.

Mohd. Shafi Khan
DEPUTY REGISTRAR (Admn.)

MADURAI KAMARAJ UNIVERSITY

Date: 17 December, 1984.

Admission in Master of Business Administration (M.B.A.) (Full Time)-1985-86.

Applications are invited for admission in Master of Business Administration (M.B.A.) (Full Time) Degree course conducted in the Department of Management Studies, Madurai Kamaraj University for the year 1985-86.

Eligibility: Any Bachelor's Degree candidate with a minimum of 50% of marks in the Humanities (Including Commerce and Business Administration) and Social Sciences and 55% of marks in other disciplines like Natural Science including Mathematics and Professional courses like Engineering.

Those who are appearing for their final degree examinations in April/May, 1985 may also apply.

Requisition of application : A requisition for application form enclosing a State Bank of India Challan for Rs. 35/- drawn in favour of Madurai Kamaraj University Account No. 1 or a crossed Bank Draft drawn in favour of "The Registrar, Madurai Kamaraj University" payable at Madurai.

Postal Orders, Money Orders and Cheques will not be accepted.

An entrance test will be held during February, 1985. There will be a Group discussion and personal interview for the admission to M.B.A. (Full time) Degree Course. The admission to the course will be based on the academic record of the candidate, the results of the entrance test, group discussion and personal interview including the assessments made for co-curricular activities. The candidates will be called for group discussion and personal interview based on their academic record and performance in the entrance test, and the University reserves itself the right to decide in this regard. The date and place of entrance test, group discussion and personal interview will be intimated to the candidates by post. Candidates shall appear for entrance test and the interview at their own cost.

Last date for receipt of requisition in the University for applications forms : **31-1-1985.**

Last date for receipt of filled in application forms : **4-2-1985.**

Late applications will not be accepted. The University is not responsible for any delay or loss in postal communication.

P.P. Chinnadurai
REGISTRAR

UNIVERSITY NEWS

VOL. XXIII JANUARY 8
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Editor :
M.S. RAMAMURTHY

All India Conference of Vice-Chancellors on Value Orientation in Higher Education

The University of Rajasthan organized a four-day All India Conference of Vice-Chancellors on 'Value Orientation in Higher Education' from December 5-8, 1984. The sub-themes of the Conference were: (i) Relevance of Education to Growth and Development Priorities; (ii) Role of Higher Education in National Integration; and (iii) Place of Moral and Spiritual Education in Higher Education. Given below are the recommendations made by the Conference.

(1) Parliament with the consent of all political parties should enact legislation to prevent interference of political parties in the working of the Universities and other educational institutions.

(2) The Union Ministry of Education, the University Grants Commission (UGC), the Association of Indian Universities (AIU) at the national level and the State Department of Education, Directorate of College Education at the State level, the Universities and the College Development Councils should create special cells to promote value orientation in education and to monitor its implementation.

(3) The U.G.C. should provide assistance to the Universities for developing source material for value orientation in education in the form of written lectures and audio-visual aids.

(4) The UGC should give 100% grants to Universities for introducing value-oriented education schemes.

(5) Emerging out of man's complex relationship with fellow human beings and with nature in a broad sense, a deep sense of love and concern for the animate and inanimate world around him is an essential part of man's awareness of the need for conservation of resources, renewable as well as non-renewable. The sublime values of oneness with nature in beauty, conservation and preservation need to be nurtured and protected and promoted. For this purpose, the selected universities should be financially assisted by the UGC and Department of Environment, for establishing inter-disciplinary Centres of Ecology, Environmental and Conservation studies.

(6) **Faculty Improvement :** The pivot of a programme of value education will be the teacher. His role is crucial :

(i) National test for appointment of teachers as a forerunner to the Indian Educational Service should be introduced.

(ii) The probation period for newly recruited faculty members in universities and colleges should be uniformly made as two years, during which they should be required to successfully undergo a training and orientation programme. While part of the training and orientation should be exclusively for deepening knowledge in the discipline, including acquaintance with recent and important developments in the subject of specialisation, the other part should be for the development of qualities, capacities and skills with special thrust on theories of learning, psychology of youth, communication skills and value education. At the end of the course, a dissertation should be submitted.

(iii) Under the Faculty Improvement Programme of the U.G.C., value orientation should be made an essential ingredient of the training.

(iv) Special fellowships of 15 months' duration should be instituted. These fellowships should be awarded to two teachers of 10% of selected affiliated colleges. Out of these 15 months, 3 months should be devoted by the teacher to undergo training in value orientation at specially selected centres of higher education/colleges where such programmes are already under implementation. The trainees should be provided the facility of free board and lodging and an outstation allowance of Rs. 500/- per month.

Such specially trained teachers should then have the responsibility of developing a group of at least 4 teachers in their colleges. When a viable group has thus been formed, regular classes in value orientation with selected reading materials should be started and the students attending such classes should be given due academic credit as is given in other regular subjects.

(v) All teachers must be involved in programmes on youth welfare and extension programmes suitably synthesized into a plan of action, oriented towards the local and regional needs. A well-planned pre-service and in-service training-cum-orientation programme should be arranged for these teachers pertaining to the various roles in the above mentioned areas. Improved and extended facilities of sports, games, gymnasium etc. should be made available in Universities and Colleges for inculcating in teachers and students qualities like team spirit and cooperation. Due academic recognition should be given to the work put in by them in these areas as well as in extension services rendered to the society by the institution. The activities under N.S.S., N.C.C., Scouts and Guides, Art and Culture and other subject associations should be promoted by providing incentives in terms of academic recognition. As a part of curriculum, educational tours to the different parts of the country, important exhibitions and fairs be organized. These tours should be supervised by senior faculty members along with planned and action-oriented activities. At the end of the tour, the students must be required to submit reports identifying the significance of various values recognized and learned by them and due academic credit be mentioned in their degrees/diplomas awarded in their basic disciplines.

(7) Working and learning should be the objective of education at University level. A 'work ethos' should be created. All teachers must stay in college/departments for 6 hours a day. Three months work experience should be made compulsory for all students before the first degree is awarded.

(8) The extension role of the Universities should be enlarged by a greater involvement of the University community in the programmes of Adult Education, Continuing Education, Population Education, Conservation of Energy, Environment as well as Research and Development in the solution of the problems of the community around it. The summer breaks and the winter breaks should be effectively utilized for reorienting the participation of the students and teachers in camps and workshops etc. organized for this purpose. A block or a village be adopted by each University Teaching Department or the College for bringing about its transformation and development by scientific methods. Appropriate institutional arrangements be made by the Universities and Colleges for planning and continuing exploring of various activities in these fields.

(9) All resolutions and suggestions made in connection with National Integration by various bodies such as exchange of teachers, admission of 20% students of other regions; teaching of one Indian language other than the regional language, selection of teachers on All India basis, studies of all religions with equal emphasis and observance of national days and festivals of various communities, educational tours, community singing be implemented in actual practice. The textual materials in various subjects must emphasize National Integration. An annual report pertaining to these activities be obtained from every institution and monitored by the cells created at Universities, State Departments of Education, U.G.C. and the Central Ministry of Education for National Integration.

Prof. T.K.N. Unnithan, Vice-Chancellor, University of Rajasthan

(10) Associations of Teachers, Students' Unions, Unions of non-teaching Staff should evolve codes of conduct.

(11) A Tribunal for each university with a common chairman for a cluster of Universitites be instituted to look into the grievances of employees.

(12) Degrees should be delinked from jobs so that examination does not remain the main focus of attention for students as well as teachers. A sufficient degree of freedom be allowed to the students to change their stream of studies at all levels on the basis of National and State level tests conducted from time to time.

(*Continued on page 6*)

Development of the Information Sector

T.K.S. Iyengar*

Towards the 21st century, many developing countries will probably have become industrialised. What should these countries strive for beyond industrialisation? Of course, there is no set goal or path for all developing countries to follow in their national development. It all depends on that country's history, natural endowment and ideological leadership, among other factors. After a developing country has become industrialised, it should not just be 'catching up' with advanced countries.

Even if a country like India does not intend to compete with the advanced nations, it cannot avoid dealing with the nature of the information society that is growing in the global community. Thus, whether or not the developing country chooses to become an information society, it behaves it to develop its information sector along with the agricultural and industrial sectors in its strategic planning for national development.

The explosive development of information technologies, represented chiefly by the computer and telecommunication systems, has accounted for the advent of information society. In less than three decades, the computer industry has emerged from virtual non-existence to become a dominant factor in society, through four generations of technology. The current thrusts of the computer field include both the super-computers and the micro-computers, their growth continuing unabated.

The potential applications of micro-computer are so diverse and pervasive that some social historians suggest that it may well rank as the third major cultural invention of the 20th century following the automobile and television. Among the many expanding frontiers of telecommunication technology, beyond the telephone and the television, are satellites which make the cost of communication practically independent of distance, and fibre optics, which can become the super highway of telecommunications, bringing all kinds of sound, picture and computer information to home and office.

Broadly defined, any technology has three aspects: hardware, software and orgware—the last, 'orgware', standing for the organisation of man and machines to take advantage of the hardware and software in the provision of certain valuable functions of the technology. This concept is particularly important for information technologies. Thus, hardware is exemplified by integrated circuits in computers and optical fibres for signal transmission. Software is exemplified by computer programmes and television programmes. Orgware is exemplified by the reorganisation of curricula, administration and research information networking which can help educational and scientific institutions perform their functions more efficiently and effectively.

India is actively participating in UNISIST activities, the International Nuclear Information System (INIS), the International Information System for Agricultural Science (AGRIS) and other systems such as Developmental Science Information Systems (DEVSIS) and the Science and Technology Policy Information Exchange Systems (SPINES). The Indian Council of Agricultural Research is making use of the AGRIS system. Recently, the prestigious National Information Centre (NIC) project under the Department of Electronics came into being with the assistance of the U.N. Centre. This will operate a national information system in support of government planning formulation.

Among other things, the NIC will also maintain and further improve data management systems related to software for national information systems. With the initiative of the Department of Space of the Government of India, a beginning is being made in using information data bases of the RECON system developed by the European space agencies. It is obvious that the volume and diversity of information for computer processing and its retrieval and dissemination are going to be of a great magnitude. The Centre is fully supporting the information technology programmes.

Even though the Government of India (DST/UGC) has always supported the SDI (Selective Dissemination of Information) plans, orgware is not well planned because of the conflict of interests in individual institutions. Several efforts made in relating information technology to the developing country situation tend to fail because of ideological institutional leaderships. For example, several professed SDI service have wrong priorities. The first basic issue is to assess the needs of scientists based in universities/public sector/R&D institutions. It means organising user profiles and assessing their needs.

Second comes the issue of SDI tapes and their continuous availability. Except in chemistry, many of these tapes have neither been continuously received or tested nor do the working scientists know anything about it. It is imperative to know first who is being served, what is wanted, which SDI tapes should go, software etc. Only then do the other aspects, the purchase of computer, what type, mode of transmission and the application of information technology, come to be considered. All this, of course, amounts to proper training methods which are lacking in India, because of too much theoretical emphasis and ideological institutional leaderships.

The success and effectiveness of information technology in a country like India is directly correlated to the reliance of scientists on information technologists and not on parallel operations and misplacement of priorities. Even though the Government has supported the information sector in the Sixth Plan period, such parallel operations will make the Government's money a drop in the ocean. [*Courtesy* : The Hindu] □

**Librarian, Indian Institute of Science, Bangalore.*

AIU's International Conference On

New Technologies in Higher Education

On the occasion of the Diamond Jubilee of the Association of Indian Universities (AIU) an International Conference on "New Technologies in Higher Education" will be jointly organised by the AIU, Indian Institute of Technology, Delhi, Jawaharlal Nehru University, Jamia Millia Islamia and the University of Delhi. The two-day Conference will be held at the Indian Institute of Technology on November 28 and 29, 1985.

Objectives: The objective of the Conference is to assess the possibilities of the now available new technologies in the background of the broad social and cultural context and the state and trends of Higher Education in India and other developing countries. The current UGC Programme through INSAT Satellite, which will be completing one year by the time the International Conference meets, would be reviewed. The experience of newer technologies in the developed countries will also be considered and ideas developed regarding strategies which correspond to the goals and objectives of higher education in the country. More importantly, possible areas of research and experimentation will be discussed.

Programme : The Conference will be conducted under four PANELS to be held concurrently after the Inaugural Session and will conclude with Plenary Session.

November 28, 1985

SESSION I (Inaugural Session)	10.30—11.30 a.m.
SESSION II	11.45— 1.15 p.m.
SESSION III	2.30— 5.00 p.m.

November 29, 1985

SESSION IV (Plenary Session)	10.00—12.00 noon

The following themes will be discussed under four panels simultaneously ;

PANEL I. NEW APPROACHES AND TECHNIQUES CURRENTLY PRACTISED IN UNIVERSITIES AND COLLEGES

The purpose of this session is to present information and evaluation of current practices both conventional as well as new technologies e.g. radio, T.V. and other techniques of distance and non-formal education.

PANEL II. EMERGING NEW TECHNOLOGIES AND TECHNIQUES

This session will deal with case studies and experiences of educational technology, comparative merits of different techniques, use of TV, Computer and Satellite and evaluation of these modern techniques.

PANEL III. COST AND ECONOMICS OF MODERN TECHNIQUES AND APPROACHES IN HIGHER EDUCATION AND APPLICATION OF MODERN TECHNOLOGY

The purpose of this session is to study, exchange information and make comparative study of these techniques.

PANEL IV. SOCIAL AND CULTURAL ASPECTS AND EDUCATIONAL ENVIRONMENT

This session will spell out features of Indian society and culture with special focus on communications both traditional and modern. It will also survey the broad educational scene in higher education. The implications of these phenomena for the use of new technology in higher education will be studied.

PLENARY SESSION : RECOMMENDATIONS, EVALUATION OF PROPOSALS FOR RESEARCH AND INVESTIGATIONS IN NEW TECHNIQUES AND FOLLOW-UP ACTION

The main purpose of this session is to make recommendations and suggest draft proposals for universities/colleges for implementing a programme of adoption of new technologies in higher education and to identify technically developed agencies to help in the implementation of such programme.

Participation : Institutions of higher learning and research as well as individuals are invited to participate. Such participation can be in terms of presenting a paper, or demonstration of technologies, aids and other learning devices developed in India and abroad.

Exhibition : It is proposed to hold an exhibition of books, journals, equipment for Video, TV and Computer-aided instruction and demonstration of new technologies during the Conference. Entries for the exhibition are invited.

Papers : Papers (accompanied by a two page abstract), not exceeding 3000 words, should be sent to the Convenor latest by June 30, 1985. Individuals, interested in submitting papers, are requested to send the following particulars to the Convenor by January 31, 1985 : (1) Name & Address (2) Title of the Paper.

Convenors : Prof. Tapas Majumdar (Jawaharlal Nehru University); Prof. S. Shukla (Jamia Millia Islamia); Prof. L.R. Shah (Jawaharlal Nehru University).

Mailing of Papers : The paper, along with two copies of the abstract, must reach Prof. L.R. Shah, Convenor, International Conference on New Technologies in Higher Education, C/o Directorate of Adult, Continuing Education & Extension Unit, Jawaharlal Nehru University, New Mehrauli Road, New Delhi 110067, INDIA, not later than June 30, 1985.

Imperative Need for Value-based Higher Education

Ramlal Parikh*

India has one of the most extensive system of higher education in terms of 139 universities and institutions of higher learning and number of colleges nearing 5000. The total enrolment of students in higher education is also nearing three million. Such an enormous strength of numbers can be of great strength to our national life if it is wedded to moral and spiritual values for an elevated life.

The major objective of higher education to provide trained manpower for various public jobs is becoming difficult of realisation because of total absence of correlation between job-planning and educational planning. It is becoming very clear that it will be impossible to absorb all university products or even substantially large number in organised jobs. Growing urge for upward economic and social mobility in our people does not permit restrictions on educational opportunities. This makes it imperative to inculcate in our students spirit of self-reliance and value-commitment.

The strength of the nation will not depend only on skilled manpower but on trained manpower dedicated to the moral and spiritual values of life. Ever since the beginning of the twentieth century, Sri Aurobindo Ghosh, Sri Gurudeo Tagore and Mahatma Gandhi pleaded for national system of education meaning "transmission of common culture and common standards of citizenship."

Sri Aurobindo Ghosh had stated as back as 1907:

"What we want here is not merely to give you a little information, not merely to open your careers for earning a livelihood, but to build up sons for Motherland to work and suffer for her."

He further specified :

"We must harmonise into a system which will be impregnated with the spirit of self-reliance so as to build up men and not machines—national men, able men, men fit to carve out a career for themselves by their own brainpower and resource, fit to meet the shocks of life and breaks the waves of adventure... so shall it become a nation and no longer a disorganised mass of men."

Gurudeo Tagore also spoke :

"Each nation must be conscious of its mission"

"We must know for certain that there is a future before us and that future is waiting for those who are rich in moral ideals and not in mere things".

"The ideals that strive to take form in social institutions have two objects. One is to regulate our passions and appetites for the harmonious development of man, and the other is to help him to cultivate disinterested love for his fellow-creatures. Therefore society is the expression of those moral and spiritual aspirations of man which belong to his higher nature."

"......I will persist in believing that there is such a thing as the harmony of completeness in humanity".

Gandhiji perhaps spoke more candidly :

"Real education consists in drawing the best out of yourself. What better book can there be than the book of humanity".

"I hold that true education of the intellect can only come through a proper exercise and training of the bodily organs, e.g., hands, feet, eyes, ears, nose, etc. In other words an intelligent use of the bodily organs in a child provides the best and quickest way of developing his intellect. But useless the development of the mind and body goes hand in hand with a corresponding awakening of the soul, the former alone would prove to be a poor lopsided affair. By spiritual training I mean education of the heart. A proper and all-round development of the mind, therefore, can take place only when it proceeds pari-passu with the education of the physical and spiritual faculties of the child. They constitute an indivisible whole. According to this theory, therefore, it would be a gross fallacy to suppose that they can be developed piecemeal or independently of one another".

"The utterly false idea that intelligence can be developed only through book-reading should give place to the truth that the quickest development of the mind can be achieved by artisan's work being learnt in a scientific manner. True development of the mind commences immediately the apprentice is taught at every step why a particular manipulation of the hand or a tool is required. The problem of the unemployment of students can be solved without difficulty, if they will rank themselves among the common labourers".

"Literacy training by itself adds not an inch to one's moral height and character-building is independent of literary training".

All these great men of India stressed the non-career components of higher education. The pur-

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**Vice-Chancellor, Gujarat Vidyapith, Ahmedabad.*

pose of higher education should not be to promote self-seeking but it should be to inculcate a spirit of self-sacrifice. Students should be trained to pursue social objective of their life rather than their personal uplift alone. They should certainly acquire more knowledge and skills to equip themselves better so that they can translate into action the social objectives of life. Knowledge and skills are means and not ends. These are instruments and not goals. These should be incidental and not central. The knowledge and skills may be increased in order to develop greater capacity to serve the community, the society, the nation and the world.

It is most unfortunate that our higher education is over-proned to careerism. Preparing for a professional career may be bye-product and not the object of education as such—particularly higher education. The higher education must first transform minds of students preparing them to dedicate themselves to the social goals. It should inculcate in them a commitment for serving others. The prevalent Indian university system hardly makes them conscious of higher values of life. We should not make students feel that pursuit of jobs through education should be devoid of moral values & ethical conduct. Since the entire educational system is wedded to self-seeking and not self-searching it leads to fragmentation and alienation.

The Unesco Report, "Learning To Be" has also pointed to the fragmentation of mind by stating :

"....separation of the intellectual, physical, aesthetic, moral and social components in our curricula is an indication of 'alienation, undervaluation and mutilation of the human person."

"Respect for the many-sidedness of personality—the physical, intellectual, emotional and ethical integration of the individual into a 'complete man' is essential to education".

Thus, the need for a specific value system as an over riding criteria of higher learning is inescapable. Higher education would not be higher without social goals of life by equipping students to dedicate themselves to the work of uplift of their millions illiterate brothers and sisters and millions of poorest people who need their services. It is the moral obligation of the students and teachers to extend their services to this deprived section of the society. Only through a kind of Experiential and work-centred learning process we can get out of the fragmentive and alienating process of higher education. We need to work for the total person and not partial person.

We should continue to absorb more knowledge and more skills in our educational process. But it will lead to disastrous consequences if professionalism is identified with selfishness and non-ethical economic mobility. The University system with enormous strength of numbers can strengthen our national integration if it imbibes values of service and dedication and professionalism becomes instrument and not the sole aim of life. □

Conference on Value Orientation in Higher Education

(Contd from page 2)

(13) All Universities and Colleges and the faculty should show a commitment towards Gandhian, cultural, secular, national and scientific values. A constant endeavour must be made by them to identify new areas of activities for the promotion of these values. The U.G.C. must foster research fellowships and National Associateships in studies pertaining to these values.

(14) Foundation courses on cultural heritage, linguistic aspect of education and values, population education, freedom movement and current history of development of India, scientific progress achieved, methods and discoveries, resource management and human development, international cooperation and world peace and elements of agricultural and industrial development be introduced in all Universities and Colleges for a continuous nurturing of values necessary for promoting the unity of India and progressive nationalism.

(15) Formation of social service leagues should be encouraged; social work should be given academic credit.

(16) All educational institutions should provide adequate opportunities to informally inculcate positive values in our youth by providing facilities for sports, games debates, get-togethers and other extra-curricular activities. Participation in such activities should be given academic credit.

(17) All Universities should be encouraged to establish Vishva Vidyalaya Kuls (University Community Associations) like the Acharya Kul at Banaras Hindu University. The parents, teachers, karamcharis and alumni and other citizens of the city interested in promotion of values should be the members of the Kul. The Kul should meet atleast twice a year and organize such activities as are conducive to the attainment of the objectives of Value Orientation in Higher Education. Formation of separate Alumni-Almamater Associations and Teacher-Parent Associations should also be encouraged and they should be adequately represented in the Vishvavidyalaya Kul.

(18) A Centre for indepth study, research and undertaking action oriented programmes should be set up at each University for promotion of value oriented education. □

Dr. Ramachandran Addresses Convocation of IIT, Bombay

Excerpts from the convocation address delivered by Dr. A. Ramachandran, Executive Director, United Nations Centre for Human Settlements, Nairobi at the Indian Institute of Technology, Bombay, on November 16, 1984.

Convocation

"...I have chosen the theme "Technological Imperatives for the Nineties and Beyond" for my address to-day as many of you would be facing technological challenges far beyond our comprehension at the present time. The question we should constantly ask is: are we preparing ourselves as a nation to face these challenges so that we can smoothen the transformations between the present and the future.

Concurrent with several technological breakthroughs, we witness to-day one discerns some clear trends in the industrial production systems, worldwide in addition to basic structural changes. These trends have strong implications for the future growth of the industrial productive capacity of countries like India, and this requires prompt policy responses and technological preparedness. One major change is a blurring of distinctions between various industrial sectors. Take, for instance, the traditional mechanical industries and look at the major products associated with them. Firstly, you will notice marked difference in the material composition of the products to meet the more and more demanding performance requirements. There are innumerable permutations of metallaurgical properties on one side and novel industrial applications of synthetic and composite materials on the other. If you compare to-day's product whether it be a bicycle or a car or a machine tool or a telephone with a similar one ten years ago, you will find the enormous difference in their material usage. Secondly, there is an increasing interface between traditional and modern industries. Just as the mechanical industries were influenced by electrical industries in the past, the present-day electro-mechanical industries are being transformed by the electronics industries, to an extent that we can describe them as MECHATRONICS. Look at the range of numercially controlled machines in use to-day and the varieties of sensors in use, ranging from modern burglar alarm to surveying instruments. Look at the ingenious ways in which optics, mechanics and electronics are combined to produce the modern cameras. Look at a piece of watch or a telephone or a calculator of this year and can you recognize it from the one used five to ten years earlier. The third major change is in the internationalization of industrial production. If you take many modern products, the raw material is processed in our country, some of its components are manufactured in two or three other countries and the product is finally assembled in a third country. Thus we see that industries tend to maximise the comparative advantages of the production processes in terms of raw materials, cost of transportation, wage structures, industrial policy incentives and market demands. This has led to increasing competitiveness of industrial products, drastically bringing down the price on one side and increasing the range of product its quality, cost and performance. To-day you can get a watch for five dollars or five thousand dollars — a video recorder for two hundred dollars or for two-thousand dollars.

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Associated with these developments, there are major shifts in the production processes demanded by new materials, designs and performance standards. At one end there are increasing applications of robotics, not merely to reduce labour costs but also to meet exacting demands of quality control and to meet the increasing competitiveness associated with the scale and cost of production. Many of the high volume industries cannot survive if they do not change the production processes. At the other end, there is a spurt in the growth of anciliary industries which feed into the modern production processes. In other words, one need not necessarily see robotics as a giant industrial process. The principles of robotics can be introduced at a relatively modest investment either it be in small scale industries or in component production.

What do these trends mean to countries like India in the nineties?

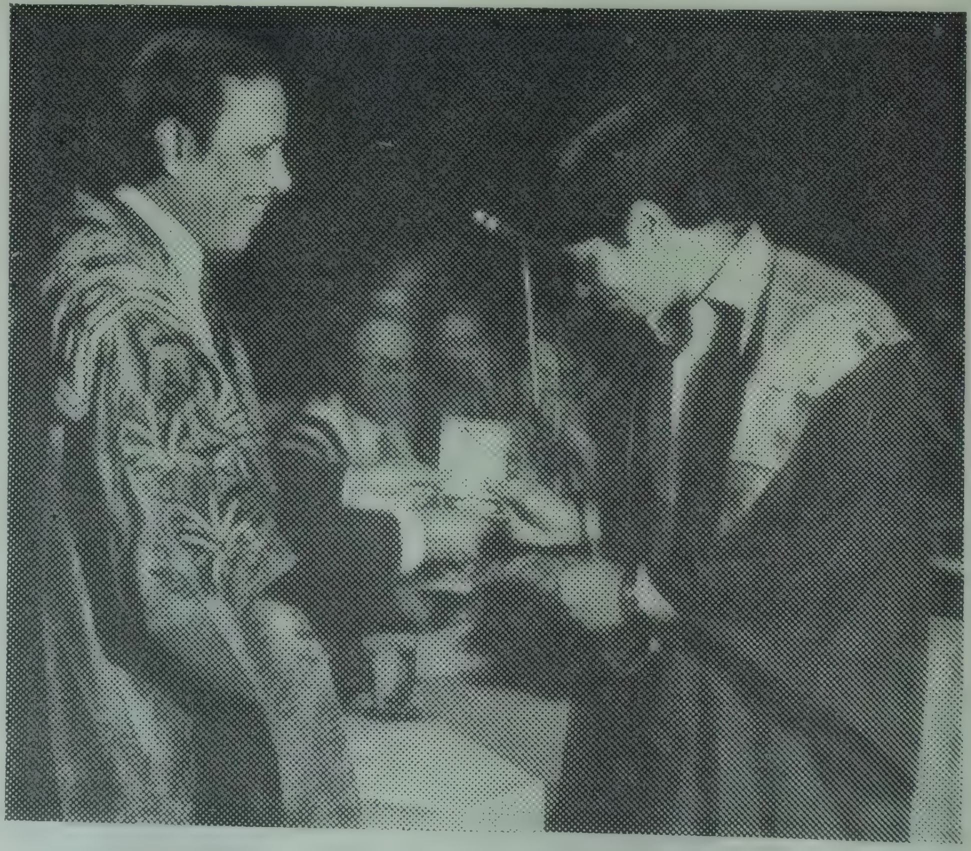
We have one of the largest domestic markets in the world; probably next only to China, for a wide variety of products. These products should, of course, be consistent with the purchasing power of the people, and their manufacture should provide productive occupation and improved living conditions. But these alone, in many instances, may not be sufficient. The financial and technological characteristics of the future industries will demand that our industries look much beyond the limits of our domestic markets. This raises three distinct and simultaneons concerns, namely, policy choices and their flexibilities, entrepreneurial attitudes; and technological innovations.

Policy options should be exercised in a manner to quickly respond to the rapid changes in the technological and market environments. Too much of rigid control will prove as disastrous as too little of it. A highly protected market may tend to become too sluggish to explore the export market while pushing the cost of products to domestic consumers beyond the limits of their purchasing power. At the same time, an open ended market leads to undesirable consequences such as wasteful consumerism, drain on foreign exchange, predatory effects of one group of industries on another, undesirable trading practices and so on. While the dilemma of choices is compounded by new technological developments, it need not necessarily lead to paralysis of action, if there is a set of anticipatory policies consistent with national development goals. Regulations and incentives should go hand in hand. Protection of employment and wage structure should be linked to increase in productivity and national wealth. Preservation of environment should be combined with the wisest use of human and natural resources. Hence, policy formulation should be based on intensive consultation among policy makers, investors, labour and technologists,— not as a process of management problem after they crop up — but as a continuous process of advance forecast of events in different productive sectors.

The challenges to the entrepreneurs will be much greater in the nineties than ever before in our history. We have had a reputation for entrepreneurship in business and trade; but our technological entrepreneurship is yet to be convincingly demonstrated. Our entrepreneurs, in the technological domain, have mostly remained several steps behind international innovations. In other words, our industrial growth has been conditioned by what is readily available in the outside world. This has resulted in two major handicaps. The products introduced in our domestic markets, as copies of foreign products, in many cases tend to be unsuitable to our requirements, and prohibitively expensive. They introduce too many incompatibilities, and do not create job potentials commensurate with the investments and volume of production.

Our entrepreneurship cannot survive the nineties unless there is a transformation in the production system. This transformation is not too difficult to accomplish. If we see the process of industrial developments in other countries, the speed with which a scientific or a technological breakthrough has been transformed into marketable products, is very striking. Once the elements of the technology becomes known, it is the imagination of the entrepreneur which propels the application of the technology either to respond to an existing demand or even to create an entirely new demand. If only our entrepreneurs could extend their entrepreneurial skills to exploit the available technologies to meet the unique demands of the Indian market, they could find very many demands both domestic and international for our products, which will be different from those produced by advanced industrial countries. We need not always trail one or two steps behind, but move ahead as countries such as Brazil and Korea have done in several sectors. Even smaller European countries like the Scandinavians have successfully identified unique industrial niches using the set of technologies available to everyone but introducing new innovations in their use.

Let me emphasize a simple fact which seems to escape our entrepreneurs. Industry is not merely a matter of productive capacity but equally important is the knowledge that underlies this capacity. If the investments are solely geared to achieving productive capacity and do not aim at the acquisition of the knowledge — the technological knowledge behind such a capacity — we could perhaps survive in the short-run but cannot, in the long run under overwhelming competition.



Dr. Ramachandran presenting a medal to a student at the Twenty-Second Convocation of the Institute.

Now all these bring me to the role of our technologists in this transformation. How could they contribute to the policy options and entrepreneurship? The systematic substantial investment in our laboratories and educational institutions was motivated in the expectation that our scientists and technologists will act as prime movers in the increasingly complex and competitive field. Our national scientific and technological pride and prestige should become demonstrable not merely by the recognition of our publications, peer-evaluations, or by stray spectacular events but by our proven capacity to underpin on a sustained basis our industrial growth prospects. How could our technologists respond to the challenges of the nineties?

The key-word is innovation. Our educational and research institutions are repositories of a huge collection of knowledge embodied in books, journals, instruments, equipments and highly trained scientists and technologist and what is more important, bright students like those assembled here. They see the technological advances taking place almost immediately as they occur, they talk about it, publish about it but unfortunately remain content with it. This is where our problem lies. What we should do is to move towards reinterpreting these advances to capitalize them for our own needs. This calls for three elements. One, is to develop a design culture which transcends conceptual and theoretical formulations. These design efforts call for strong inter-disciplinary team-work, intensive search for new applications and recognition of possibilities for production processes. Such an effort would provide the much-needed support to our entrepreneurs. Everyone need not necessarily engage in original inventions, but every competent technologist should attempt to bring his or her knowledge to contribute towards innovative processes or products. Here again, by design skill, I do not mean only sophisticated or exotic designs and advanced technological products. In a country like ours there is an enormous scope for innovations in traditional industries as in textiles, metallurgy, food processing and preservation, building materials and so on. What is important is to look for ways of creating new and small and medium scale enterprises, reduce cost of essential goods and services, create new opportunities for gainful employment and increase our competitive advantages in international trade?

I only wish to draw attention to a familiar scene in New York, to illustrate this point, viz., the staggering volume of Japanese saris sold everyday in New York and most of which reaches consumers in India. The peculiar aspect of this is that almost all of it is made in Japan, using materials and colours and innovative designs which sometimes surpasses the imagination of our traditional textile producers. This is an illustration of the manner in which the combined power of new materials, production processes, design concepts, market identifications, penetration and internationalization of monetary and technological advantages have all combined to make this possible. You can imagine the nature of interaction and co-operation that should have taken place between government policy-makers, the industrial establishments, technologists and designers as soon as Japanese perceived the vast sari market in modern India. The phenomenal success of Japan in export markets be it in automobiles, motorcycles, electronic items, cameras and now in computers is the result of efforts, systematically planned and executed after identifying markets, specifications, costs and after sales service of their products. Has anything comparable to this taken place in India. Can we not identify opportunities similar to this in different sectors both for the domestic market as well as the international scene? I think we can and let us hope that we would in the coming decade. This is where the challenge for the future lies.

I have availed myself of the privilege you have given me of thinking aloud and commenting on technological imperatives for India in the nineties. Never has there been a greater need for Institutes of Technology like yours to turn out people of excellence and leadership quality, with ability to discern societal needs and values. You should abhor empty rhetorics, have your youthful vigor to ride the galloping horses of change and emerge as leaders in advancing the economy and welfare of the poor millions.

I shall now like to end with a quotation:

"We live in deeds, not words:
in thoughts, not breadths,
In feelings, not figures on a dial;
We should count time by heart
throbs, He most lives
Who thinks most — feels the
noblest — acts the best"..." □

Principals Conference on Educational Institutions and National Development at Panjab Varsity

The Department of National Service Scheme of Panjab University organised a two-day Conference of Principals of affiliated colleges of the University on December 17-18, 1984 on the theme "Educational Institutions and National Development". Prof. R.C. Paul, the then Vice-Chancellor, inaugurating the Conference, highlighted the ills of our educational system. He deplored that the educational system in India was in a state of chaos and mess. In our planning, priorities have not been fixed, the result of which is utter confusion and haphazardness. Education is being imparted through private managements with an eye on pecuniary gains and political aggrandisement. Since the employment in the country is linked with degrees, half baked graduates are being produced through fair and foul means. It has resulted in mushroom growth of colleges, institutes and universities which do not maintain any standards. Quality has been sacrificed for the sake of quantity.

He observed that education can be a powerful instrument of social transformation if it is imparted in the spirit of uplifting the whole society. In a country where majority of the people are poor and illiterate, the thrust should be on compulsory primary education. Education will certainly help in the implementation of health programmes, family planning and other areas of national development which require the voluntary involvement of masses.

N.S.S. should aim at exposing students to social realities. This exposure can be achieved by providing students a wide range opportunities to study the problems of society through practical experience and enabling them to tackle those problems. As such N.S.S. should also aim at making education socially relevant. A realistic appraisal of the problems should be made and NSS should be geared to tackle those problems.

Earlier, welcoming the Chief Guest, Mr. Gurdev Singh, Programme Coordinator, National Service Scheme, dwelt on the achievements of N.S.S. in the Panjab University. The organisation started in 1970 with a volunteer strength of 4,000 has now touched 11,000. Keeping in view the meritorious services by the N.S.S. Department of the University, Ministry of Sports, Govt. of India, has entrusted to this Univesity, a project of National Consultation on Youth. The prevailing conditions in the country throw a challenge to this organisation and the youth. The Principals' Conference has been convened to deliberate the grave issues facing the country. During the Conference, the Role of Educational Institutions in National Development, Agitations in the Universities and Colleges, National Integration through Extra-and-Co-curricular Activities, setting-up a Rural Development Centre at Panjab University were discussed. The Panjab University shall undertake a project in collaboration with UNICEF for welfare of the children during the International Youth Year—1985. A task force of 10 volunteers from each college would be raised to fight the evil forces of separatism and communalism.

Principal S.S. Bhatti in his Paper on "Agitation in Campus—Causes and Remedies" pointed out that psychological, physical, socio-economic, cultural and political reasons give rise to unrest in the Campuses. He pleaded to introduce a large number Co-curricular activities to utilise surplus energy curbness. The other participants who presented papers included Mrs. Usha Kiran Sharma, Principal D. Jolly and Principal Surjit Kaur.

Mrs. S. Roy, Principal, M.C.M.D.A.V. College for Women, Chandigarh, moved a vote of thanks and urged the Principals to contribute for the success of National Service Scheme.

After deliberations, the Conference made the following recommendations :

(i) that NSS extension programmes should be made a part and parcel of the curricula;

(ii) that the content of education at the first degree course be made more relevant to rural development and to the development needs of the society;

(iii) that education should be linked with field work, practical experience and productivity should constitute an important effort;

(iv) that education through NSS should ensure relevance, orientation, flexibility and diversification;

(v) that political parties should have a code of conduct and refrain from exploiting the students for their vested interests;

(vi) that education has an important output for development and towards this end educational institutions have a key role to play in promoting the process of national development;

(vii) a calendar of events for celebrating International Youth Year was chalked out and emphasis was laid on mass singing by the youth to promote nationalism, blood donation, family welfare activities and better environment.

GKV Chancellor inaugurates new projects

The Chancellor of Gurukula Kangri Vishwavidyalaya, Hardwar, Shri Virendra, who is also the President of Arya Pratinidhi Sabha, Punjab and Editor of Daily Pratap, inaugurated amidst the chanting of Vedic Mantras the construction of a block of six residential quarters for the non-teaching staff at the campus of the Vishwavidyalaya, recently. Laying its foundation stone he said that it is just a small beginning of a greater plan to reconstruct more residences for the staff without any discrimination or distinction between the teaching and non-teaching staff. He also said that the old residences should be renovated. The Vice Chancellor thanked the University Grants Commission for providing the assistance. He also summarised the progress of the Vishwavidyalaya during this academic year, highlighting the 18th Conference of American Studies, the Seminar of the Philosophy Department on Human Values, the Philosophical Conference of the U.P. Philosophical Congress, Dr. R.L. Varshney's academic trip to the U.S.S.R. under Indo-Soviet Cultural Exchange Programme, beginning of the construction of the flats for the teaching staff, progress made in Adult Education and various other extension programmes, including the Ganga Project and the forthcoming programme of the Himalayan Studies, start of M.Sc. courses in Bio-chemistry and Ph.D. courses in English and Psychology, opening of a Health Centre, institution of Professorships in various departments, implementation of UGC Merit Promotion Scheme and other welfare programmes.

In the evening, the Chancellor inaugurated the National Service Scheme at Punya Bhumi, the original Gurukula site at Kangri Village across the Ganga, situated between the flowing current of the Ganga and its streams which are flooded during rainy season. The Chancellor as well as the Vice-Chancellor Shri G.B.K. Hooja, asked the cadets and academic fraternity that had come from the city to the pastoral site to remember the ideals of the founder Swami Shraddhanand and the aims and objectives of the Gurukula and its founding fathers. Various speakers stressed the need of closer contacts between the town and the village, between the teacher and the taught so that the students from villages educated in the institutions situated in the city are not alienated from their soil and do not hate physical labour and their environment. This camp, the Chancellor said, would give the students a chance for greater mutual understanding and co-operation. He also said that these old and abandoned buildings should be put to active use and efforts should be made to build approach roads.

The Vice-Chancellor revised the progress made in Village Kangri after its adoption by the University in removing illiteracy, building pucca road, removing rubbish, building a pucca platform, pucca houses, pucca shops and a community hall. He also said that a library has also been running in the village under the care of the University and that the income of the villages had been improved by making available loans from the bankfor various economic, commercial and productive purposes. He praised and encouraged the students for their active participation in improving the lot of the rural masses.

The Registrar of Gurukula Kangri Vishwavidyalaya, Shri Virendra Arora and Pro-Vice-Chancellor, Sri Ram Parsad Vedalankar in their speeches asked the students to face the challenges ahead.

Annual Conference of NSS Programme Officers at Andhra Varsity

The Annual Conference of NSS Programme Officers was held at Andhra University on 29th and 30th November, 1984. 104 Programme Officers of 98 affiliated colleges of the Coastal Districts of Andhra Pradesh participated in the Conference. Sri V.P. Rama Rao, I.A.S., Principal Secretary, Dept. of Education, Government of Andhra Pradesh, who was the Chief Guest, handed over Rolling Shield and mementos to the outstanding Units. He congratulated the NSS Units for their achievements in a wide spectrum of fields. Earlier, presiding over the function, Prof. A. Srirama Das, Vice-Chancellor-in-charge, Andhra University

Association of Indian Universities
AIU House, 16 Kotla Marg
New Delhi-110002

Applications are invited by the Association of Indian Universities (AIU) for the following posts in the Research Cell on prescribed forms obtainable from the AIU Office on payment of Rs. 2/- either in person or by sending a self addressed stamped envelope :

1. **Project Director (Economics of Education) : Rs. 1500-2000**
   The person should be knowledgeable in the field of Economics of Higher Education, and will be required to collect data and prepare norms and guidelines for NON PLAN (Maintenance) grants of various types of universities. He/she should also give adequate evidence of his/her capability, experience and capacity for independent work.
2. **Statistician : Rs. 700-1300**
   The person should have a first or high second class Master's Degree in Statistics/Mathematical Statistics and Training in Computer Programming with three years experience of statistical analysis of data. Knowledge of computer programming essential.
3. **Research Assistant : Two Posts : Rs.425-700**
   First or high second class Master's Degree in Social Sciences with at least 2 years experience in the area of research/published work. Training and experience in computer programming will be desirable.

The posts carry allowances admissible to AIU employees generally at Govt. of India rates.

Last date of receipt of application is **February 1, 1985**

emphasised the need for motivation and voluntary spirit among NSS students.

Prof. B.R.K. Raju, Programme Co-ordinator and Head of the NSS, Andhra University outlined solutions for various problems including the establishment of an NSS Cell in the State Directorate of Higher Education to coordinate the working of NSS programme in the entire State. He said that the Conference provided a feedback for assessing the programme and exhorted that NSS must aim to improve the living standards of the community.

Sri A.M. Govardhan, Programme Coordinator, NSS, Osmania University highlighted the importance of the scheme. He said that the spirit and vitality of the youth should be properly channelised. As instruments of social change, officers and volunteers of NSS should set the tone and motivate the rural youth. The various disciplines like Civil Engineering, Medicine etc., involved in NSS could serve the respective needs of society. Greater technical training is a very important aspect in the successful conduct of the projects.

Cochin University pilots computer literacy programme

Three hundred school children in Cochin area studying in five schools have started their computer training as part of the Computer Literacy Studies in Schools (CLASS) programme launched by the Ministry of Education, Government of India. Each of these schools has been provided with two computer systems developed and supplied by the British Broadcasting Corporation (B.B.C.).

The University of Cochin, which has been identified as the Resource Centre for the purpose, coordinates and monitors the programme. Maintenance of the computers, giving technical support to the school teachers and developing computer aided learning (CAL) packages and other software ideas are all done by the Department of Computer Science of the University of Cochin.

The CLASS programme is mainly aimed at making school students aware of the instructional possibilities of computers as tools for learning various subjects more efficiently than by traditional methods. The programme which is in its first phase has been introduced in 218 schools spread all over the country. It is expected that the programme will be expanded to 1200 schools by April, 1985.

Centre for studies in management and accounting inaugurated at Kakatiya Varsity

Inaugurating the Centre for Studies in Management and Accounting on 25th December at the Department of Commerce, Kakatiya University, Prof. V. Balamohan Das of Andhra University congratulated the first achievement of the Centre for publishing a text book on "Management Accounting" in Telugu which will be useful for the students of Under-graduate and Post-graduate courses. Dr. K. Rajeshwar Rao, Reader, who edited the book with the authors of ten teachers explained the establishment of "Centre for Studies in Management and Accounting" (CESMA) and its objectives of developing literature, publishing of books, journals, promoting research in the field, imparting training, techniques to entrepreneurs and executives. Prof. J. Satyanarayana, Dean, Faculty of Commerce, Osmania University, released the book and added it is the first of its kind to be written in Telugu, on the subject in the State.

While speaking on the occasion, Prof. T. Vasudev, Vice-Chancellor and Chief Guest of the function appreciated the efforts of the commerce teachers and blessed the CESMA for its success in all the academic activities to be conducted. He referred to the decision of the Vice-Chancellors' Conference, held recently for the introduction of Telugu medium teaching at Post-graduate level and stated that the book will be quite useful and asked the members of CESMA to write many more books in Telugu for P.G. courses.

The Research Cell of the Association of Indian Universities is going to conduct a 4-day workshop on the 'Management of Examinations' at Delhi in the first week of February, 1985. The modern scientific techniques to deal with the issues related to pre-conduct, conduct and post-conduct stages of Examinations will be discussed at the workshop. Nominations are invited from the Controller of Examinations, Registrars, Officers in the Examination Wing, personnel attached to Examination Reform Units and others dealing with the examination work. The course fee is Rs. 500/- per participant. No. TA/DA will be given. The last date for sending the nominations is 31.1.1985. Along with the nomination, a DD in favour of Secretary, AIU for Rs. 500/- may be sent. For further enquiries please contact:

Prof. V. Natarajan
Project Director (Exam.)
Research Cell
Association of Indian Universities
AIU House, 16 Kotla Marg,
New Delhi-110002.

COSIST assistance to Physics Dept. of BHU

The Department of Physics, Banaras Hindu University has received financial assistance of Rs. 72.25 Lakhs under Committee on Strengthening of Infrastructure in Science and Technology (COSIST) Programme of the University Grants Commission, New Delhi. This assistance has been provided by the Commission to the department for strengthening of its infrastructure for Post-Graduate Teaching and Research.

Rs. 8.00 lakh has been marked for the Post Graduate education while Rs. 64.75 has been provided for strengthening research in the areas of Physics of Materials with particular reference to Synthesis, Crystal Growth and characterisation of Crystals lasers and Molecular photo Physics and also in Theoretical Physics.

Out of this assistance, Rs. 58.50 lakh will be spent on purchasing of various equipments including a Electron Mircoscope, TEM with STEM, EBIC, EDAX and ELS attachments for Rs. 30.00 lakh.

Rs. 35.00 lakh had also been provided by the U.G.C. under the special assistance programme to the department.

Departments of Ceramic Engineering and Mining Engg. are also expecting financial assistance under the COSIST programme.

Nuclear research centre at JNU

A Nuclear Science Centre has been set up at Jawaharlal Nehru University complex to serve as a national research facility for research in physics, chemistry, biology, medicine and other related fields. The Centre has been set up in pursuance of the decision taken by the University Grants Commission in creating major research facilities in the university system with cooperative and autonomous management. This is the first of such centres to be set up at various places in the country.

Professor A.P. Patro of the Saha Institute of Nuclear Physics, Calcutta who has joined as the first Director of the Centre, will be assisted by Professor G.K. Mehta of the IIT, Kanpur who has been designated as the Joint Director and is likely to join soon. Prof. Patro has been connected with cyclotron of the Saha Institute since he started his career. Professor Patro has also been associated with the planning of accelerator programme in the country.

Prof. Mehta has been associated with the 2 MeV vande graft accelerator at IIT, Kanpur.

The two scientists will be responsible for setting up an Accelerator Centre with 14 UD Pelletron as a core for doing research in Nuclear Physics and allied sciences by the Universities. This facility will be used for interdisciplinary work by other groups besides the nuclear physicists.

The projects is likely to be completed in about five years time.

Indo-US collaborative project at Poona Varsity

The Indo-U.S. collaborative project titled "A Rural Communication Studies Project for Development-Oriented Research and Training" has been approved programmatically by the Department of Science and Technology subject to approval by the Ministry of Finance, Government of India. The project is to be implemented by a team of researchers-educators co-ordinated by Dr. M.R. Bhiday at Poona University and Dr. Shirley A. White at Cornell University. The project will use research based information to shape Poona University's use of new technologies to deliver formal and informal education. The objectives are :

(1) To set up an action research model, as a frame-work for generating a research agenda and a data base for administrative decision making.

(2) To facilitate exchange of commnnications, education of social scientists for specific inquiry, educative activity and development of faculty of Poona University.

(3) To set up a system for institutionalizing communication resources and use of modern technologies in the communication process.

The American team consisting of the Deputy Ambassador, U.S. Embassy, and Dr. James Smith, United States Department of Agriculture presented a cheque for 19.32 lakhs to Dr. V.G. Bhiday, the Vice-Chancellor recently.

M.P.Ed. Course at Hyderabad

The State Government of Andhra Pradesh has granted permission for starting the Master's Degree Course in Physical Education in the Government College of Physical Education, Hyderabad with effect from the year 1984-85, it is reported. The ceiling for the number of seats has been fixed at 12.

News from Agril. Varsities

8th Symposium of Indian Society for Veterinary Surgery at PKV

The inaugural function of the 8th Symposium of Indian Society for Veterinary Surgery was held in the auditorium of the College of Agriculture, Akola on 16th December, 1984, under the chairmanship of Dr. K.R. Thakare, Vice-Chancellor of the Punjabrao Krishi Vidyapeeth Dr. Tyagi, Director of Research, HAU, Hissar was the chief guest of the function.

Dr. George, Chairman of the Indian Society for Veterinary

Surgery threw light on the various activities undertaken by the society and expressed his deep satisfaction about its contributions. During his speech he appealed to the young generation to cope up with the needs of the society by their active participation in the programmes based on the larger interest of the farming community and animal keepers.

While delivering his address, Dr. Tyagi, Chief-Guest of the function, expressed satisfaction about the advancement of the Punjabrao Krishi Vidyapeeth. He further said that like any other institution, there were many challenges before society and they were to be faced boldly. In his speech he stressed the point that this science should not merely grow in isolation but it should also form the meaningful relationship with other sciences which are related to the medcial side of the human treatment. This approach will also give momentum to the aspect of animal production programme in a larger scale, as surgery is not only a science but a skill also, he said. Inviting the attention of the participants and delegates he pointed out many simple techniques developed in this country which can effectively be used for curing animal diseases without much expenses. In the same way he also emphasised, while adopting any new technology one should always keep in mind the traditional and cultural back-ground of this great nation.

Dr. K.R. Thakare, Chairman of the function stressed the importance of high yielding and other animals and their place in the development of Agriculture. He further clarified that apart from the high yielding animals, the bullock power was still an important power of the common farmer and therefore, efforts should be concentrated to save and protect such animal wealth also.

In this function, Dr. Kaikini, Dean, Faculty of Veterinary Science read out the address sent by Hon. Annasaheb Shinde, Vice-Chairman, State Council of Agricultural Education and Research.

The symposium was largely attended by the delegates from all over the country. Quite a few recommendations were made during the concluding session of the seminar for development of Veterinary Science.

Rabbit research project underway at KAU

A research project on rabbits has been sanctioned by the Indian Council of Agricultural Research for implementation by the Department of Animal Breeding and Genetics at the College of Veterinary and Animal Sciences of Kerala Agricultural University, Rabbits imported from U.S.S.R. and U.K. to I.C.A.R. at Garsa, Himachal Pradesh have arrived at Mannuthy for this project. The breeds are Soviet Chinchille, Grey Giant and New Zealand White which will be used for experiments under the supervision of Dr. G. Mukundan and Dr. A.D. Joy to produce different crosses. The study comprises the assessment of breeding efficiency, nutritive requirements, management practices, meat and fur technology of the different cross bred rabbits and locals.

News from Abroad

International Symposium on World Trends in S & T at Australia

The Third International Symposium on 'World Trends in Science & Technology Education' organised jointly by the International Organisation for Science & Technology Education and the Brisbane College of Advanced Education, Australia was held during Dec. 10 to 20, 1984 at the premises of the College of Advanced Education, Brisbane. The theme of the Conference was 'Teaching the Interactions of Science, Technology and Society' (STS). The emphasis was on four different aspects, namely, theoretical structures for teaching STS interactions, illustrative examples of teaching of STS, certain new dimensions of STS and, finally, research and development reports from around the world.

There were 148 participants drawn from 48 countries of the world, both developed and developing and both advanced and new to STS. The Conference got off to a start with a message and speech by His Excellency Sir James Ramsay, Governor of Queensland. There were in all eight keynote speeches on various themes of STS dealing with all the four themes of the Conference. There were three lead symposium papers dealing with Science, Technology and Society from the four regions, namely, the Pacific, Papua New Guinea (Watson), Africa (G. Iwa), Scandinavean region (Kuituneon) and South East Asia (V. Natarajan).

At the plenary session some of the recommendations that were made were approved. Some of these are:

(1) Wherever possible, STS must be introduced as a separate course at all the three levels of education, primary, secondary and tertiary levels. Wherever it has already been introduced as

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We Congratulate . . .

(1) Shri Hardwari Lal, Vice-Chancellor, Maharshi Dayanand University who has been elected to Lok Sabha from Rohtak.

(2) Shri K. R. Narayanan, former Vice Chancellor, Jawaharlal Nehru University who has been appointed Minister of State for Planning.

an optional course, efforts must be made to strengthen.

(2) Resource materials for the teaching of STS must be prepared by each country taking into account special needs and requirements.

(3) Wherever possible teachers will have to be trained to implement STS.

The next conference is proposed to be held at Keel, West Germany in 1987 and the theme of the conference will be 'Science, Technology and Quality of Life'.

Study Visits

The third revised edition of "Grant for Study Visits by University Administrators and Librarians 1985-87" has been published by the Association of Commonwealth Universities, John Foster House, 36, Gordon Square, London WCIHOPF.

The 30-page booklet provides information on some 40 sources which give financial aid for University administrators and librarians wishing to travel to another developing/developed country for training, visits and taking part in workshops etc. or research. It also lists in an Appendix "Courses and Conferences which are offered in Commonwealth countries from time to time and, under specified conditions, may be attended by University administrators from other countries of the Commonwealth."

Sports News

Inter University Tournaments

Ball Badminton (W)

The venue of the next Inter-University Ball Badminton (W) Tournament is Bangalore University. The tournament is being organised from 18th to 20th January, 1985. The following 19 universities are participating in this tournament:

1. Mysore University; 2. Nagarjuna University; 3. Madurai Kamaraj University; 4. Osmania University; 5. Calicut Universsty; 6. Kerala University; 7. Gandhiji University; 8. U.A.S., Bangalors; 9. Bharatiyar University; 10. Mangalore University; 11. Madras University; 12. Poona University; 13. Bharathi Dasan University; 14. Gulbargha University; 15. Sri Krishna Devaraya University; 16. Annamalai University; 17. Sri Venkateswara University; 18. Kakatiya University; 19. Bangalore University

Boxing

The Inter-University Boxing Championship will be held at Haryana Agricultural University, Hissar from 8th January to 11th January, 1985.

Wrestling

All-India Inter-University Wrestling Tournament which was earlier scheduled to be held from 8th January, 1985 was postponed owing to unavoidable circumstances. The new dates of the tournament to be conducted by Amravati University, are 22nd to 27th January, 1985.

Weight Lifting & Best Physique

Berhampur University, Orissa is the venue for the All-India Inter-University Weight Lifting and Best Physique competitions this year. The tournament which was earlier scheduled to be held from 21st to 24th December, 1984, postponed owing to Lok Sabha Elections, is now being organised from 24th to 27th January, 1985.

Cycling

The next Inter University Cycling (Men & Women) Tournament will be organised by the Punjabi University on January 18, 1985. The tournament will be conducted at the Punjabi University velodrome. The following universities are participating: (1) Kurukshetra University, Kurukshetra (M&W), (2) Panjab University, Chandigarh (Men), (3) University of Madras, Madras (Men), (4) University of Rajasthan, Jaipur (M&W), (5) Punjabi University, Patiala (M&W), (6) Devi Ahilya Vishwavidyalaya, Indore (Men), (7) Rani Durgavati Vishwavidyalaya, Jabalpur, (Men), (8) University of Bombay, Bombay (M&W), (9) Punjab Agricultural University, Ludhiana (Men), (10) Kumaun University, Nainital (Men), (11) M.S. University of Baroda, Baroda (Men), (12) Osmania University, Hyderabad (M&W), (13) University of Allahabad, Allahabad (Men) and (14) Lucknow University, Lucknow (Men).

Combined Universities Hockey Team (Men)

Combined Universities Hockey Team (Men) is participating in the National Championship being held at Palghat (Kerala) from Feb 3, 1985. Prior to participation in the National Championship the team will play in the Republic Day Hockey Tournament at Katni. This tournament will be held from Feb. 20, 1985. The Combined Universities team is Jt. Winner of this tournament last year. The following are the members of the team :

1. Mr. Ashvini Kumar (GNDU), 2. Mr. V.P. Singh (GNDU), 3. Mr. Dalbir Singh (GNDU), 4. Mr. Daljit Singh (GNDU), 5. Mr. Pradeep Dutta (Jiwaji), 6. Mr. Sanjaya Dubey (Jiwaji), 7. Mr. Shamshet Ahmed (AMU), 8. Mr. Harjit Singh (Punjabi), 9. Mr. Rupinder Singh (Punjabi), 10. Mr. Jagdeep Singh (Pun.), 11. Mr. Karan Pal Singh (PAU), 12. Mr. K.K. Yadav (Allahabad), 13. Mr. P. V. Poonumdurai (Mysore), 14. Mr. S. Mehmood Hussain (AMU), 15. Mr. Harjinder Singh (Delhi), 16. Mr. Prem Kumar (Delhi)

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THESES OF THE MONTH

A list of Doctoral Theses Accepted by Indian Universities

HUMANITIES

Philosophy

1. Choudhuri, Aparajita. *The problems of the physically handicapped children in Assam: A sociological study*. Gauhati U.
2. Mishra, Lallanji. *Language and fact in the philosophy of L. Wittgenstein*. Magadh U, Bodh Gaya.
3. Saha, Smita. *Ethics in perspective of Sartre's existentialism*. U Calcutta.
4. Upadhyay, Murli Dhar. *Dhammasangani: Ek darshnik anusheelan*. Magadh U, Bodh Gaya.

Fine Arts

Drawing & Painting

1. Sharma, M.K. *Ragmala paintings of Rajasthan, 18th century*. U Raj, Jaipur.

Language & Literature

English

1. Bhogaraju, Parvathi. *The comic vision and design of R.K. Narayan's novels*. Andhra U, Waltair.
2. Bhuvaneswari, C.V. *Bilingual behaviour of the Naikan Community in Kerala*. JNU, Delhi.
3. Chatterjee, Amal Chandra. *Hardy and the existentialist dilemma*. Avadh U.
4. Chaudhuri, Birendranath. *Shakespeare's comedies and the world of commerce*. U Calcutta.
5. Dutta, Mainak. *A study of the imagery in Wuthering Heights*. Gauhati U.
6. Gopal Rao, B. *Conflict between self and authority in the American war novels of the forties*. OU, Hyderabad.
7. Jameela Begum. *Environmental determinism in Frank Norris, Stephen Crane and Jack London*. U Ker, Trivandrum.
8. Kailash Kumar. *George Herbert: His personality and his poetry*. Gauhati U.
9. Malvalli, Jyothi Nanjudian. *A critical study of W.S. Gilbert with special reference to the savoy operas*. U Nagpur.
10. Singh, Ram Bharose. *The english novels during the nineteen thirties*. Avadh U.

Sanskrit

1. Haridas Raidas. *Brahman granthon mein prapt akhyanon ka samalochnatmak adhyayan*. RDV, Jabalpur.
2. Mishra, Udaibhan. *Alankar Manjusha: Ek sameekshatmak adhyayan*. Avadh U.
3. Patal, Rasiklal Kikabhai. *Yagavatsya Smriti: Ek adhyayan* SPU, Vallabh Vidyanagar.
4. Pathak, Ram Prakash. *Brahttrayi Mahakavyon ka sameekshatmak adhyayan*. Avadh U.
5. Pati, Nilakantha. *A critical edition of Tattwa Muktavali*. Utkal U, Bhubaneswar.
6. Ravindra Kumar. *Palaeography of Brahmi Script, 200 A.D. to* 600 *A.D.* U Delhi.
7. Roy, Sudhangshu Mohan. *A study of the Ayurveda in the Satapatha Brahmana*. Gauhati U.
8. Singh, Rajmani. *Mahabharat mein Rajdharam*. Avadh U.
9. Tripathi, Chandra Shekhar. *Paraskar Grahya sutra ka parisheelan*. Avadh U.
10. Tripathi, Mukul Rani. *Kalidas ka saundarya bodh*. Avadh U.
11. Tripathi, Sidhi Nath. *Sattkon kee parampara: Udbhav evam vikas*. Avadh U.
12. Visweswari, Amma K. *Philosophy of Udayana*. U Ker, Trivandrum.

Hindi

1. Acharya, Prabha. *Mahakavi Virenind krit Chandra Prabhcharitam: Sahityik adhyayan*. Avadh U.
2. Anabh Sultana. *Hindi anchlik ka [illegible]n mein [illegible]ritra srishti*. Avadh U.
3. Asha Kumari. *Paurushey Ramayana per poorvavarti Ram kavya ka prabhav*. U Delhi.
4. Chandra, Mandvi. *Pauranik kavya shashtra tattvanusheelan*. Avadh U.
5. Chandra Prakash. *Mudrarakshas ka natyashastriya adhyayan*. Avadh U.

6. Dwivedi, G.R. *Gunibhut vyang: Sidhant aur lakshya.* Avadh U.

7. Gandhi, Prabhavati. *Premchand ke purush patron ka samajshastriya anusheelan.* Vikram U, Ujjain.

8. Goel, Daya Kishan. *Sathottar hindi cine-geet: Vastu evam shilp.* OU, Hyderabad.

9. Gupta, Anita. *Hindi vertani ka vikas.* U Delhi.

10. Jain, Gita. *Adhunik hindi aur gujarati ke geeti-natya.* U Delhi.

11. Jaiswal, Munilal. *Maithili Sharan Gupta kee sanskritik chetna.* Sambalpur U.

12. Kesar, Archana. *Dogri upanyasen cha nari patra.* U Jammu.

13. Khanna, Madhu. *Hindi ke pramukh mahakavyon mein angiras.* Avadh U.

14. Mishra, Arun Prakash. *Kabir aur Tulsi ke vishesh sandarbh mein kavya-bhasha ka samajik adhyayan.* JNU, Delhi.

15. Mishra, Shrikant. *Sur Sagar ka bhasha vaigyanik adhyayan.* Mag U, Bodh Gaya.

16. Mishra, Sudhakar. *Mahakavi Ashvaghosh ke kavyon ka darshnik adhyayan.* Avadh U.

17. Misra, Narendra Kumar. *Cultural basis of post Bhartendu age.* Utkal U, Bhubaneswar.

18. Mohammad Ibrahim. *Rupvarnan kee Bhartiya evam Farsi parampara tatha Jayasi.* Avadh U.

19. Pandey, Radha. *Bimb nirman ke priprekshya mein Dinker ke kavya pratibha ka anusheelan.* Avadh U.

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21. Shakuntla Kumari. *Vidyapati kee Nachariyan.* Bihar U, Muzaffarpur.

22. Sharma, Ramesh Chand. *Naye kavion ke kavya-shilp sambandhi siddhant.* U Delhi.

23. Shukla, Batuknath. *Vivadi lekhan ka swarup aur vikas vishleshan: Hindi ke pramukh sahityik vivadon ke sandarbh mein.* Avadh U.

24. Singh, Narender Bahadur. *Brij bhasha kavya parampara mein Behraich janpad ka yogdan.* Avadh U.

25. Singh, Rajni. *Sathottari hindi kavita mein adhunikta bodh.* Avadh U.

26. Singh, Rama. *Hindi ke anchalik upanyason per Prem Chand ka prabhav.* Avadh U.

27. Singh, Sanjay. *Tulsi kee rajnitik drishti aur unka yugbodh.* Avadh U.

28. Sinha, Shobha. *Mohan Rakesh ke sahitya mein adhunikta bodh kee abhivyakti ke vividh swaroop.* RSU, Raipur.

29. Srivastava, Subhash Chandra. *Hindi sufi kavya parampara mein prakriti chitran.* Avadh U.

30. Sukhda. *Bhushan Kavi aur Acharya.* U Delhi.

31. Surya Prakash. *Ashthachhap kavya mein lokoktiyon aur muhavaron ka saundarya.* U Delhi.

32. Tiwari, Vijay Laxmi. *Upanyaskar Ilachand Joshi kee patravatrna.* Avadh U.

33. Tripathi, Anand Prakash. *Amritlal Nagar: Vyakti aur rachnakar.* Avadh U.

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Urdu

1. Fasihuzzaman. *Hakim Abdul Hamid Shaida: His life and works.* Mag U, Bodh Gaya.

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Bengali

1. Adhya, Hemantakumar. *Sukumar Ray-to-Tar Sahitya.* U Calcutta.

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2. Basu, Achintya Kumar. *Dui viswayuddha o Bangla theatre*. RBU, Calcutta.

3. Bhattacharyya, Biswabandhu. *Bangla rajnaitik upanyaser kayekti parjay*. U Burdwan.

4. Bishnu, Sunil Kanti. *Rameshchandra samaj, sahitya-o-sanskriti*. U Burdwan.

5. Chattopadhyaya. Bijoy Krishna. *Bingsa Satabdir bangla natake charitra chitran*. RBU, Calcutta.

6. Datta, Nilima. *Influence of Sri Sri Syamananda on middle Bengali Baisnav religion and literature*. U Calcutta.

7. Renuka Debi. *Upendranath Gangopadhyay, jiban-o-sahitya*. U Calcutta.

Assamese

1. Bora, Purna Ch. *The philosophical outlook and religion of Sri Sankardeva*. Dibrugarh U.

Arabic

1. Khan, Mohd. Abdul Mateen. *Scholars of Deoband and Islamic Sciences*. Nagpur U.

Tamil

1. Eswara Pillay, T. *Tamilil tuutu illakkiyankal*, U Ker, Trivandrum.

Telugu

1. Meera Swamy, *A. Manu Vasucharitrala: Tulanatmaka pariseelanamu*. SKU, Anantapur.

Geography

1. Bharati Nath. *Soil productivity and land classification of a portion of the Damodar-Dwarakeswar Interfluve, District Bankura (W.B.)*. U Burdwan.

2. Chytanayapanditaradhya, K.N. *Road net-work and traffic flow in Mysore District*. U Mysore.

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History

1. Baruah, Sunil Pawan. *Development of the press in Assam from Arunoday to* 1947. Cauhati U.

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———. *Utilization of INSAT 1B for higher education*. Delhi, Author, 1984. 70p.

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2.	Associate Professor of Agril. Chemistry	3	1	1	1	—	1
				Failing for			
3.	Associate Professor of Agril. Botany	5	1	1	1	1	2
				Failing for			
4.	Associate Professor of Plant Pathology	2	1	1	1	—	1
				Failing for			
5.	Associate Professor of Animal Sci. & D.Sci.	1	—	—	—	—	1
6.	Associate Professor of Agril. Extension	3	1	1	1	—	1
				Failing for			
7.	Associate Professor of Agril. Economics (1 probable)	2	1	1	1	—	1
				Failing for			
8.	Associate Professor of Horticulture	3	1	1	—	—	2
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12.	Assistant Professor of Animal Sci. & D.Sci.	1	—	—	—	—	1
13.	Assistant Professor of Biochemistry	3	1	1	1	—	2
				Failing for			
14.	Assistant Professor of Food Sci. & Tech.	1	1	1	1	—	—
				Failing for			
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	(i) Agril. Botany (6 probable)	9	4	2	2	—	1
	(ii) Agronomy	4	2	2	—	—	—
	(iii) Plant Pathology	4	2	1	1	—	—
	(iv) Horticulture	4	1	1	1	—	1
	(v) Agril. Chemistry (1 probable)	5	2	1	1	—	1
	(vi) Agril. Entomology (2 probable)	4	1	1	1	—	1
	(vii) Agril. Economics	1	—	—	—	—	1
	(viii) Agril. Engineering	3	1	1	—	—	1
	(ix) Biochemistry	3	1	1	1	—	2
				Failing for			
	(x) Food Science & Tech.	1	—	—	—	—	1
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	(i) Agronomy (3 probable)	5	1	1	1	1	1
	(ii) Agril. Botany (2 probable)	4	1	1	1	—	1
	(iii) Ag. Chemistry (probable)	1	—	—	—	—	1
	(iv) Agril. Entomology (probable)	1	—	—	—	—	1
	(v) Plant Pathology (2 probable)	4	1	1	1	—	1
	(vi) Animal Sci & D.Sci. (probable)	1	—	—	—	—	1
	(vii) Agril. Economics	26	7	2	2	2	13
	(viii) Agril. Extension (probable)	1	—	—	—	—	1
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Post at Sr. No. 14

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Pay Scale

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Qualification

1. Bachelor's degree in Agriculture/ Science in II Class or its equivalent CGPA.

2. Master's degree in Food Science Technology/Biochemistry/Nutrition, in II Class or its equivalent with two years experience in the subject.

OR

1. Bachelor's degree in Agriculture/ Science in II Class or its equivalent CGPA.

2. Master's degree in Food Science Tech./Biochemistry/Nutrition in II Class or its equivalent.

3. Ph.D. in Food Science Technology/ Biochemistry/Nutrition.

Post at Sr. No. 15

Assistant Professor of Agril. Engineering.

Pay Scale

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Qualifications

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Post at Sr. No. 16

Assistant Professor of English .

Pay Scale

Rs. 700-40-1100-50-1600

Qualifications

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2. Master's degree in II Class or its equivalent CGPA with two years experience.

OR

1. Bachelor's degree in II Class or its equivalent CGPA.

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OR

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6. The persons outside the University applying for the posts shall produce the No Objection Certificate from their present employer at the time of interview. They will not be interviewed without production of No Objection Certificate even though the application is forwarded by their employer.

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D.N. Surve
REGISTRAR

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Dated : 26-12-84

Applications in prescribed forms are invited for the following posts:

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Choice of Selection Committee may not necessarily be confined to those who apply formally. No application except in prescribed application forms may be considered.

Prescribed application forms may be obtained from the office of the Registrar personally on payment of Rs. 5/- (Rs. 3/- for S.C./S.T.) in cash at the University Cash Counter or by sending a self addressed envelope of 25×13cms. affixed with stamps worth Rs. .1.40 accompanied by crosssed I.P.O./Bank Draft of Rs. 5/- (Rs. 3/- for S.C./S.T.) in favour of the University of North Bengal. Filled in application forms (6 copies) alongwith one self-addressed unstamped envelope must reach the office of the Registrar, P.O. North Bengal University, Dist. Darjeeling, Pin: 734430 on or before **31-1-1985.**

REGISTRAR

Attention Creative Artists

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Entries are invited by the Ministry of Social Welfare, Govt. of India, for the LOGO COMPETITION on "Integrated Child Development Services" Scheme.

The Scheme, which at present has over 1,100 projects in the country, is proposed to be considerably expanded during the Seventh Plan period.

The design of the LOGO should be distinctive, attractive and communicative enough to be used on correspondence and its blown-up replicas exhibited on panels.

The BEST entry would be awarded a cash prize of Rs. 5,000/.. In addition, there would be three consolation prizes of Rs. 1,000/ each.

Last date for the receipt of entries is 31.1.85

For further details about the ICDS Scheme, please write to Shri K.L. Gupta, Under Secretary, Ministry of Social Welfare, Shastri Bhavan, New Delhi (Tele-382683).

Design entries may also be addressed to him.

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University News

JANUARY 16, 1985

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Prof. Obaid Siddiqi (third from left) was awarded an Honorary Degree of Doctor of Science (Honoris Causa) at the Special Convocation of the Aligarh Muslim University. Also seen in the picture are : Dr. Zameer Ahmad, Registrar, Mr. Saiyid Hamid, Vice-Chancellor and Prof. K.M. Bahauddin, Pro-Vice-Chancellor of the University.

CLASSIFIED ADVERTISEMENTS

MARATHWADA UNIVERSITY
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Advertisement No. Estt./Dept./1/1985
Dated : 2-1-85

Applications are invited for the following posts in the University Departments so as to reach the undersigned on or before **February 2, 1985.** Figures in the brackets indicate the number of posts in each subject. Reservation of posts for SCs, STs and NT/DNT is as indicated in the Brackets below the subject concerned.

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Candidates who are employed at present must submit their applications through their Employers.

Canvassing, direct or indirect, will be disqualification.

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Requests for prescribed application forms for fellowships, if required, may also be made to the Editor, CIEFL, Hyderabad.

Last date for receipt of filled in applications for courses in English is **15-2-1985**

Last date for receipt of filled in applications for courses in French, German and Russian is **1-4-1985** and for courses in Arabic it is **30-4-1985**.

K. Jayashankar
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Opinions expressed in the articles and reviews are individuals and do not necessarily reflect the policies of the Association

Editor :

M.S. RAMAMURTHY

FOOD SCIENCE & TECHNOLOGY
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15 FEB 1985
C.F.T.R.I. MYSORE

PM's Initiatives for Revitalising Education

Prime Minister, Shri Rajiv Gandhi, in his first call to the nation, soon after the 12-day mourning for Mrs. Indira Gandhi, had stated: "Our education system needed to be reconstructed as a dynamic force for national growth and integration. I intend to initiate a comprehensive review of the system and to build a national consensus for reform."

As a follow up of this intent, the Prime Minister, Shri Rajiv Gandhi, has set up a three-member informal group headed by Prof. P.N. Srivastava, Vice-Chancellor of Jawaharlal Nehru University to advise him on educational plans and policies. The group which will suggest reforms in education and lay down priorities has two other members. They are: Dr. P.L. Malhotra, Director of National Council of Educational Research & Training and Dr. Moonis Raza, former Director of the National Institute of Educational Planning and Administration.

Further, the Prime Minister while reorganising various departments of the Central Ministries has created a full-fledged Ministry of Science & Technology. The Departments of Science & Technology, Scientific & Industrial Research and Non-Conventional Energy Sources will all come under the new Ministry of Science & Technology. This will make for a greater coordination in scientific research.

In his first nation-wide televised broadcast after assuming office as Prime Minister following the massive victory at the recently concluded elections, the Prime Minister indicated that education would occupy a high place in the Government's action programmes. In this broadcast, *inter alia*, he said:

"Education must promote national cohesion and the work ethic. The grandeur of our freedom struggle and its significance for national integration have to be brought home to every student. Our schools and colleges should acquaint the younger generations with India's ancient heritage and culture. The curricula and textbooks should curb parochial and communal interpretations of our composite culture.

"I have looked at some of the policies and programmes in this field. I have asked that a new national education policy be drafted.

"We are formulating programmes to use on a large-scale the new communication technology in our school system. Delinking of degrees from jobs under Government is under active consideration. Steps are being taken to establish an open university to bring higher education within easy reach of all. The Central Schools Organisation will be expanded. These schools will function as centres of excellence in every district of our country.

"I would strongly emphasise education's organic link with the productive forces of society. We shall reorganise vocational education to align it with industry, agriculture, communications and other productive sectors of our economy."

The speed with which actions have been taken by the Prime Minister is a positive indication of his earnestness to accord education the priority it deserves. Hard work and concerted action on the part of all will enable our greatest wealth, namely our people, "to realize their potential to the full".

Let us all dedicate ourselves to this great task of building a united and strong India and for furthering the happiness of mankind.

Higher Education and Five Year Plans

Policies, Plans and Perspectives

S.N. Saraf*

Text of the paper presented at the Fifteenth Seminar on Management of Education Systems for University and College Administrators held at the Administrative Staff College of India, Hyderabad in October, 1984.

The full paper will be published in three parts. The first part appears below.

This draft paper attempts to present a synoptic review of the policies and plans of Higher Education especially in relation to University Education incorporated in the first Six Five Year Plans, the gains and perspectives. A comprehensive review of all the sub-sectors of higher education, including technical, medical and agricultural education, is being carried out and will be available soon.

Policy planning precedes plan formulation. Implementation of plans, over a period of time, throws up various issues of a practical nature which lead to reformulation of policies and also changes in plan priorities. Thus policy planning, plan formulation and programme implementation are the three inter-linked processes, one influencing the other. The formulation of social and economic development, plans, over the years, have been guided principally by specific policies laid down by the Government from time to time after due deliberations of various high-powered Committees and Commissions either set up by the Government or other influential agencies and bodies. This indepth diagnosis of the situation carried out by these Commissions and Committees, impact of the programmes of inter-sectoral developments and evolution of new policies in line with national aspirations and goals lead to the formulation of concrete projects and plans incorporated in successive five year plans. Likewise, in the area of educational development policy enunciation and formulation of programme guidelines have emanated as a result of detailed analysis and study of current problems and development of future perspectives, carried out by several bodies, Commissions, and Committees set up by the Government and non-Governmental agencies.

The entire planning period of 34 years, between 1951-85, from the point of view of educational policy initiatives which were the basis of plan formulation in education can broadly be divided into three segments.

(a) the first segment covering the period 1951-66 when the first three plans were implemented;

(b) the second segment of 1966-69, the plan interregnum period, when the Education Commission's Report submitted in 1966, was processed resulting in the publication of National Policy on Education, 1968 ; and

(c) third segment covering the period 1969-85, when national policy and planning was largely influenced by the recommendations of the Education Commission, (1944-46) and the National Policy on Education, 1968.

The period 1966-69, which incidentally was coterminus with plan paus of three years, 1966-69, undoubtedly marks the famous dividing line between the first and the third segments in the evolution of educational policy and planning in India.

The pre-Education Commission Report era (1951-66), covering a period of three Five Year Plans or 15 years can again roughly be divided into two phases—the first phase covering the First Plan (1951-56) and second phase covering Second and Third Plans (1956-66).

For the *first phase* covering the First Plan, policy inputs were principally available from Governmental and non-Governmental Reports on Education, such as the Zakir Hussain Committee Report on Basic Education, the National Planning Committee Report on Education and Technology, Report on Post-War Educational Development, 1944 (Sargent Plan), Kher Committee Report on Primary Education, Saxena Committee on Social Education and University Education Commission Report 1948-49, the monumental document on Higher Education. While some reports dealt with all levels of education, though not in depth, there were a few reports and documents which examined

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**Visiting Consultant, National Institute of Educational Planning and Administration, New Delhi.*

The opinions expressed in this paper are personal views of the author. These do not, in any way, reflect the views and policies of the National Institute of Educational Planning and Administration.

particular sectors of education and laid down specific policies. The most significant document, which has influenced all the plans right from the beginning and still continues to determine policy parameters including that of education is the Constitution of India, 1950.

The Planning Commission, having been set up in 1951, did not have sufficient time to carry out diagnostic studies and formulate new policies and programmes for inclusion in the First Plan excepting that it had the benefit of detailed analysis of University Education carried out by the University Education Commission, (1948-49). First Plan attempted to coordinate the various post-war development projects and programmes which were more or less in operation in 1951. Even so, the first two years of the First Plan were mainly devoted to dealing with the problems of food and inflation.

The *second phase* of ten years period covered Second and Third Plan (1956-66). In addition to the major policies and programmes forming integral part of the First Plan as a result of reflections of various Committees and Commissions, these two plans incorporated the recommendations of the Secondary Education Commission. The Secondary Education Commission reported in 1953 (mid-point of the First Plan), advance action programmes were initiated during the end of First Plan, but concrete programmes were included only in this Second Plan. In addition to this, the recommendations of the Three Year Degree Course Committee, Rural Higher Education Committee, Scientific Personnel Committee, Engineering Personnel Committee and other groups and bodies set up by the Ministry of Education, Central Advisory Board of Education and Planning Commission were incorporated in the Second Plan.

The *third phase* began with the publication of Education Commission's Report in 1966 and overlapped with the Plan Interregnum of 1966-69 during which only Annual Plans were formulated and implemented. During the Plan Interregnum of three years, there was detailed study of and discussion and reflection on the Report of the Education Commission at various levels. The result of these discussions were incorporated in the National Policy on Education of 1968.

The *fourth phase* in the evolution of the national education policy and planning began with the formulation of the Fourth Plan in 1969. The Fourth and subsequent Plans have incorporated recommendations of the Education Commission 1964-66 and the National Education Policy, 1968. This phase is still continuing and has covered the Fifth and Sixth Plan periods as well.

To sum-up, it could be concluded that the major educational policies and programmes incorporated in the developmental plans of the country owe their origin to the fundamental thinking and deliberations of high ranking experts in various walks of life who were associated with numerous Committees and Commissions.

The state of higher education in 1947 was critically reviewed by the University Education Commission which was set up in 1948 and reported in 1949—a couple of years before the beginning of the First Plan in April 1951. Making an assessment of the position as in 1951, the First Plan had the prophetic vision to observe that the expansion of elementary education, as visualised by the Constitution, "will necessitate expansion of facilities at higher levels also as more and more students pass out of primary schools." Referring to the defectiveness of overall structure of the educational system the assessment indicated that one such defect was its top-heaviness. It was pointed out that "although the provision at the secondary stage is properly propositioned to that at the primary stage, that at the University stage is larger than the base can profitably support. This is revealed also by the distribution of educational expenditure among the various stages." The diagnosis was forthright. It was mentioned that "the general problem is one of consolidation rather than expansion except in certain fields like Public Administration, Social Service Administration, Business and Industrial Administration etc. at the University stage where the provision is non-existent or insufficient". The recent expansion in these areas, it was observed has not always been on a sound basis with adequate provision of teachers, equipment, etc. which has unduly lowered standards.

The University Education Commission drew pointed attention to the emphasis on the academic and theoretical aspects of education, too much dependence on employment by Government or Commercial concerns which can absorb only a limited number; undue strain on the resources of the universities as students, on the completion of secondary education, tend to drift to universities in the absence of any other alternative. The high cost of education especially at the university level, it was pleaded, prevented many an intelligent students from proceeding to higher education. The need of the situation was summed up as consolidation of university education and devising a system of higher education suited to the needs of the rural areas.

It was in this backdrop that the First Five Year Plan was formulated. The problems of higher education which have persisted, several issues which have emerged at one point of time or the other during the period 1951-1980; nearly thirty years policies and programmes incorported in six development plans of education, have been briefly presented in the following paras.

In terms of providing a comprehensive analysis of the situation and proposing developmental strategy, the First Five Year Plan benefited largely by the Report of the University Education Commission made available in 1949. The Report of the University Education Commission received respectful attention because it came at a favourable time when the country was just adopting the technique of planned development. While reviewing the situation and proposing developmental programmes, planners acknowledged the significant contribution of the Commission saying that it had "received valuable help from the Commission's report in framing recommendations in the light of resources and the overall needs of the country". The three-fold problems of the re-organisation of the University Education emanating from the Report of the University Education Commission and incorporated in the First Plan were to enable it to yield the best results it is capable of; building up a new system(s) more suited to national needs; and working out relationship of various systems existing side by side. Reform of the existing system was suggested in four distinct areas: enhancing allocations for higher education, reducing overcrowding in colleges, improving standards of teaching and administration, and control of universities. All important areas like financing, administration and management of higher education were stressed, academic and qualitative—improvements were not overlooked. On the eve of the First Plan, there was overall shortage of finances for all sectors of education; higher education being the worst sufferer. It was, therefore, felt that a statutory body like the University Grants Commission should be set up to look into the problems of financing of higher education and its standards. The recommendation of the University Education Commission that a University Grants Commission be created at the federal level was a key recommendation which largely influenced evolution of policy and planning of higher education in India. Optimum utilisation of all existing resources was recommended alongwith suggestive measures pending the availability of envisaged finances.

Overcrowding in colleges, which makes individual attention simply impossible, is not a new phenomena. The First Plan referred to it in details and suggested concrete measures. Development and application of tests on a large scale was suggested so that only persons fit to benefit from higher education are admitted. It, however, stipulated that selective admission to higher education institutions can be enforced only of the pre-University education becomes purposeful and complete in itself whereby a large majority of students find gainful imployment. The idea of non-formal education, of taking examinations at higher education stage privately through correspondence courses and radio lectures, etc. in order to give an opportunity to those who have to enter life early, was advocated as early as 1951. While discussing the question of recruitment to the services, the First Plan recommended that the non-possession of a degree should be no bar to taking the competitive examination which should be used for assessing both aptitude and acquiring knowledge for a job. In fact it was suggested that insistence on a degree as minimum qualification for a large number of even routine and clerical posts, should be changed. The First Plan even stated that in services it may be advisable "not to pitch the standards of academic qualifications high so that youngmen with the requisite aptitude can be selected at an early age, say, at the end of the secondary stage, and whatever further training they require is given to them in institutions maintained by the departments themselves". It was felt that such a measure would make it unnecessary for many students to crowd colleges merely to get a degree for securing employment.

A large number of measures were suggested for improving standards of teaching. One of the major reasons for the low standards of teaching cited was the poor scales of pay and unsatisfactory conditions of services of the staff employed. Increasing the number of working days, reducing the incidence of casual holidays so that studies are not disrupted, inviting guest speakers with high academic attainment to teach in institutions located in big towns and cities, providing opportunities to students in community service and extension work, raising the age-limit for admission to universities etc. were some of the measures suggested to improve quality of teaching.

It seems that the First Plan saw in 1950-51 a close link between the standards of teaching with the business of electioneering in the Universities. While discussing several measures for improving standards of teaching, the First Plan stated, among other things, "proper steps must be devised to remedy the existing state of affairs in Universities where, in too many cases, power and position depend not on the quality of work a person puts in but on his capacity to manage votes in the various university elections." This reflected, to a large extent, the view of the University Education Commission, 1948-49, incorporated in the First Plan.

The word 'teacher-politician' has been referred to in the First Plan while discussing reforms relating to management and administration of universities. The autonomy of the universities, it was mentioned, gets nullified because "of the introduction of democratic control in universities" which throws up teacher-politicians who are "subjected to unhealthy outside influences." Referring to the great disparity in the quality of administration in different universities and the neglect of the all India aspects in the institutions of higher education, including universities administered by the state governments, it was recommended that the functions of the University Grants Commission should also include ensuring of minimum standards of teaching and internal administration in the various universities and securing proper attention for the national aspects of university education.

The First Plan referred to the University Education Commission's recommendations regarding a new system under the name of rural university for providing higher education to the rural areas. It was recommended that "the Central Government should help to establish, during the period of the Plan, at least one such university, wherever the earlier stages of basic education, out of which it has to grow, have been worked out". It was felt that such rural universities would serve the villages and such an experience would be useful for effecting necessary reforms in other universities so that they are able to serve the national needs more effectively. The rural universities should pass through a period of experimentation during which it is essential that they should have free scope for development. The degrees of rural universities, it was recommended, should have as much validity in the matter of public appointments as those of older universities.

Deploring the undesirable consequences of the phenomenon of over-crowding in colleges and universities, the First Plan had pleaded strongly for selective admission on the basis of merit and in relation to manpower requirements. Was this heeded? In the opening sentence of the section under University Education in the Second Plan, a pointed reference was made to rapid increase in the number of students enrolled in universities and colleges affecting the standards of education and phenomenal output of students in arts and science courses. While there was 71 per cent increase in total enrolment, increase in the output of graduates was 41 per cent. The wide difference in the input-output ratios, among other things, highlighted the phenomenon of large failures, wastage and stragnation. Having referred to rapid expansion and its consequent repercussions on standards, it mentioned that, "in the course of second five year plan, seven new universities are to be established."

Three important steps which may reduce pressure on admission in higher education institutions and consequently improve the standards of university education were mentioned. The first was the introduction of diversified courses at the secondary level which may help, to some extent, in checking the rush of students to arts courses. The second was delinking of degrees for the purpose of recruitment to public services. Appropriate changes in the conditions and methods of recruitment to public services would bring in consequential changes in the quality of higher education. The third was to improve the standards of affiliated colleges which significantly contributed to extremely unsatisfactory situations in higher education.

As a result of the setting up of the University Grants Commission, which had a comprehensive mandate to carry out, sizeable allocations for higher education were provided in the Central Plan. The greater share of the outlay in the second Plan was for consolidation, provision of scholarships, organisation of seminars, tutorials, improvement of buildings, laboratories and libraries, increase in the salary of teachers. It was during the Second Plan that the Three Year Degree Course was introduced, in a big way, with the objective of improving the quality of university and college education. This was also linked with the new pattern and structure of education, namely 11 years of schools, 8 years of elementary education +3 years of higher secondary education, with provision for multi-purpose/diversified courses, suggested by the Secondary Education Commission and 3 years of first degree courses.

The Second Plan took stock of the totality of the situation and referred to the outlays for higher education under other sectors like agriculture, health, science and technology which provided for training qualified manpower for various developmental projects. **[To be concluded]**

SARDAR PATEL UNIVERSITY

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REGISTRAR

Convocation

Justice Bhagwati Addresses Convocation of Sardar Patel University

Excerpts from the convocation address delivered by Justice P.N. Bhagwati of Supreme Court of India at the Sardar Patel University, Vallabh Vidyanagar, December 15, 1984.

"...This University is named after Sardar Patel, one of the greatest Statesmen this country has produced. He was a man rooted in the soil of this country and no one knew more than he the problems and difficulties of the rural population because he came from a rural area and he never ceased to belong to it. He provided strong and dynamic leadership to the people in the struggle for freedom and never for a moment did he falter or quail in times of crisis. He possessed a unique strength of character and he never shied away from truth. He was essentially a man of action, the iron man of India. If there is any one person to whom the credit must go for bringing about the unity and integrity of India after independence, it is Sardar Patel. When the British left the shores of India, they left behind them a large number of Princely States over 500 in number, which on the withdrawal of the British, became sovereign States and India was faced with a serious problem of its political integrity but Sardar Patel by persuasion, and where necessary by force, liquidated the Princely regimes and made their territories part of one united India. Sardar Patel in a remarkable act of statesmanship achieved for India what Bismarck did for Germany and laid the foundations of a strong united India.

But today, unfortunately, we seem to be bent upon undoing the great work done by Sardar Patel, we find that forces of division and disintegration are enveloping the country. Sadly enough, narrow parochial and regional loyalties are coming to the fore and threatening the unity and integrity of the nation. We seem to have forgotten that we are children of the same mother—sons and daughters of the same soil. We have begun to think of ourselves in terms of caste, creed, colour and language. This is a very dangerous trend which must be arrested if we want our country to be strong and powerful. The history of India over the past centuries bears witness to the fact that India was at no time a single political unit. Even during the reign of Maurya dynasty, though a large part of the country was under the sovereignty of the Mauryan Kings, there were considerable portions of the territory which were under the rule of independent kingdoms. So also during the Moghul rule which extended over large parts of the territory of India, there were independent rulers who enjoyed political sovereignty over the territories of their respective kingdoms. It is an interesting fact of history that India was forged into a nation neither on account of a common language nor on account of the continued existence of a single political regime over its territories but on account of a common culture evolved over the centuries. It is cultural unity—something more fundamental and enduring that any other bound which may unite the people of a country together—which has welded this country into a nation. But, until the advent of the British rule, it was not constituted into a single political unit. There were throughout the period of history for which we have fairly authenticated account, various kingdoms and principalities which were occasionally engaged in conflict with one another. During the British rule, India became a compact political unit having one single political regime over its entire territories and this led to the evolution of the concept of a nation. This concept of one nation took firm roots in the minds and hearts of the people during the struggle for independence under the leadership of Mahatma Gandhi. He has rightly been called the Father of the Nation because it was he who awakened in the people of this country a sense of national consciousness and instilled in them a high sense of patriotism without which it is not possible to build a country into nationhood. By the time the Constitution of India came to be enacted, insurgent India, breaking a new path of non-violent revolution and fighting to free itself from the shackles of foreign domination, had emerged into nationhood and "the people of India" were inspired by a new enthusiasm, a high and noble spirit of sacrifice and above all, a strong sense of nationalism and in the Constitution which they framed they set about the task of building a strong nation based on certain cherished values for which they had fought.

The Preamble of the Constitution was, therefore, framed with the great care and deliberation so that it reflects the high purpose and noble objective of the Constitution makers. The Preamble declares in highly emotive words pregnant with meaning and significance:

"WE, THE PEOPLE OF INDIA, having solemnly resolved to constitute India into a SOVEREIGN SOCIALIST SECULAR DEMOCRATIC REPUBLIC

and to secure to all its citizens:

JUSTICE, social, economic and political;

LIBERTY of thought, expression, belief, faith and worship;

EQUALITY of status and of opportunity; and promote among them all

FRATERNITY assuring the dignity of the individual and the unity and integrity of the Nation; IN OUR CONSTITUENT ASSEMBLY this twenty-sixth day of November, 1949, do HEREBY ADOPT, ENACT, AND GIVE TO OURSELVES THIS CONSTITUTION."

These words embody the hopes and aspirations of the people and capture and reproduce the social, economic and political philosophy underlying the Constitution and running through the warp and woof of its entire fabric. It is significant to note that the Preamble emphasises that the people who have given to themselves this glorious document are the people of India, the people of this great nation called India and it gives expression to the resolve of the people of India to constitute India into a sovereign socialist secular democratic republic and to promote among all its citizens fraternity assuring the dignity of the individual and the unity and integrity of the nation. The Constitution makers were aware of the past history of the country and they were also conscious that the divisive forces of regionalism, linguism and communalism, may one day raise their ugly head and threaten the unity and integrity of the nation, particularly in the context of the partition of India and the ever present danger of the imperialist forces adopting new strategems, apparently innocuous, but calculated to destabilise India and re-establish their hegemony and, therefore, they laid great emphasis on the unity and integrity of the nation in the very Preamble of the Constitution. The Constitution makers also made various other provisions in the Constitution with a view to preserving and protecting the unity and integrity of the country. But in the last few years, unfortunately, owing to the emergence of narrow parochial loyalties fostered by interested parties with a view to gaining advantage for themselves, a serious threat has developed to the unity and integrity of the nation and the very concept of India as a nation is in peril. The threat is obtrusive at some places while at others it is still silent and it is masquerading under the guise of apparently innocuous and rather attractive clap-trap. The reason is that when the Constitution came to be enacted, we took the spirit of nation-hood for granted and paid little attention to nourish it, unmindful of the fact that it was a hard-won concept. There is still time for us to halt this suicidal tendency and to protect and safeguard the unity and integrity of the nation by a conscious and determined effort. It is for you the youth of this country to assume leadership in this direction. My generation has failed the people of this country and it is for you, young men and women, to prevent the breaking up of this country into fragments. You must forget all differences of caste, creed, colour, race, language or religion and have only one thought uppermost in your mind, namely, that you are Indians first and Indians last. It makes no difference what religion you profess, what language you speak, what region you inhabit. It is a great country in which you are born. It is a country which has an imperishable culture which has survived over 5000 years. You are the inheritors of a great destiny and I appeal to you today, in the name of the future of India, to live up to the great values which are enshrined in our culture. We do not look upon our country as an inert mass: it is not merely a conglomeration of towns and villages, mountains and forests, streams and rivers. We look upon our country as a mother and let us today resolve that we shall serve Mother India with a total sense of devotion and dedication.

There are a few words which I would like to mention with regard to the role which education must play in our national life. We must realise that our education must have its roots in the soil of the country. It must help us to get to the heart and intimate sense of our culture. It is for this reason necessary that we must set our sights anew, take our foundations on our own being, our own mind and our own spirit and establish a continuity between the still living power of our past and the yet uncreated power of our future. Our education must, above all, give us a sense of national pride and a deep and abiding faith in the future of our country. This of course must not lead to narrow chauvinistic patriotism which contracts the mind and leads to retrogressive sentimentalism. It should not degenerate into a clinging to the past forms which were once a living frame or our culture, but are now dead or dying. Rather it should open out the mind to the eternal values and verities that have always formed the bed-rock of our culture. We must not blindly imitate the west, for their value systems are different from ours and so is their socio-economic structure. The framework of their educational system is essentially elitist in nature and that is the system which we are mechanically and thoughtlessly trying to impose on the nonelite who constitute the bulk of our population. The result is that our education has failed in the achievement of its true purpose and it has not brought out to full advantage all that is in the individual citizen, his potentialities, his originality, his creativity, his habits and attitudes of mind and his sense of values. We cannot forget that a nation is ultimately nothing but an aggregate of individuals united by a common cultural link and sharing identity of historical experience. If, therefore, we want our nation to progress, to acquire its innate greatness and to take its rightful place in the comity of nations and the life of the human race, we should improve the quality of education keeping in mind our socio-economic needs, our national objectives, our knowledge and culture, our native temperament and our social genius. But at the same time our education should also promote universal humanism which is the hallmark of true education. We should be ready to receive noble thoughts and ideas from all directions. Mahatma Gandhi said: "I do not want my house to be walled in on all sides and my windows to be stuffed. I want the cultures of all the lands to be blown about my house as freely as possible. But I refuse to be blown off my feet by any." Our Vedic prayer also says: आ नो भद्राः क्रतवो यन्तु विश्वतः। We should not shun any new ideas and thoughts. Our education must foster innovation and criticism, debate and dissent. It should provoke the intelligentsia into abrasive behaviour. It should promote intellectual and cultural freedom with tolerance not only for the thought that we like, but also for the thought we hate, for it is only by discussion and dissent that there can be human progress, material as well as spiritual. No stronger plea for freedom can be conceived than Shri Shankaracharya's exclamation:

नोत्पद्यते बिना ज्ञानं विचारेणान्यसाधनैः।
"wisdom canot be attained except by investigation and discussion." And there is no greater assertion of tolerance than in the following words from the Rig Veda:

संगच्छध्वं संवदध्वं संवोमनांसि जानताम्।
Let us come together, let us discuss and let harmony be thereby achieved. This should be the aim and objective of education.

There is one other matter which is causing deep pain and anguish to me and I must mention it to you. Today if we look around us we find that we are facing a severe crisis of character and all our social, political and economic ills are the result of this crisis of character. Some disease or sickness seems to have overtaken us and we appear to be going down in a dark abyss from which it looks doubtful whether we shall ever be able to return. We see poverty and ignorance, want and destitution, dirt and squalor around us, but that is not something which is so depressing as lack of character which has become an all-pervasive feature of our social and political life and which we find in various forms and manifestations such as corruption, nepotism, struggle for power and position and in short all forms of moral degradation. Somehow or other, everyone today seems to be concerned more with himself with his own power and position, than with the country. Today love for the country appears to have vanished from our hearts. Many of the people in public life do not even seem to feel any sense of shame at what they are doing. Sometimes in a mood of frustration I begin to wonder whether it is possible for the country to sink any lower. But that is precisely why it is the duty of all of us to save the country from chaos and ruination and this of us to save the country from chaos and ruination and this we can do only if we are gripped by a higher ideal. Let us ask overselves the question: Why were we all united and strong during the freedom struggle? Why were we ready to sacrifice everything, our property, our liberty, even our life, during the national movement for independence? There was a totally different atmosphere in the country then; every one was animated by a spirit of service and sacrifice. Why? Because Mahatma Gandhi had placed a great ideal before us — the ideal of freedom for the country. Our minds were possessed and our hearts were gripped with this great ideal and it evoked the highest and the best in us. Inspired by this great ideal we forgot regionalism and linguism, casteism and communalism and became one nation. But today unfortunately, we have no ideal before us, no higher loyalty to obsess our minds. We are drifting without any sense of direction and that is why we are thinking only of ourselves and not of our country. This is the situation which has to be changed and changed petty soon, but, how is this to be done? Now slogans or shibboleths, no large promises or high sounding phrases are going to be of any help here. What is necessary is to transform the quality of our youth by inculcating in them the twin ideals of service and sacrifice, instilling in them a sense of social awareness and public commitment and injecting in their young minds the great constitutional values which are enshrined in our constitution? We have to change the quality of our education and make it responsive to the socio-economic needs of our country. We need education which will build the character of our students, because without character no nation can survive and if we do not introduce character building education, we might go the same way as did the Greek and the Roman civilisations. It was Mahatma Gandhi who said: "What is education without character and what is character without elementary personal piety? Purity of character depends on purity of heart. Character cannot be built by mortar and stone. It cannot be built by other hands than your own. Character building comes from your very basis and really speaking it must come from within yourself." There is a beautiful Chinese proverb which says: "Where there is purity of heart, there is beauty of character, where there is beauty of character, there is harmony in the home; where there is harmony in the home, there is order in the nation and where there is order in the nation; there is peace on earth." The entire educational effort must therefore be directed towards building of character and changing of the attitudes of our young men and women. That is why in the great Tattiriya Upnishad which contains the first convocation address ever delivered in the history of mankind the sage exhorts the students:

सत्यं वद । धर्मं चर । स्वाध्यायात् मा प्रमदः ।

The sage ask the students always to speak the truth, to practice Dharma and not to swerve from study and education. These are the three noble injunctions given by the sage to the pupils and if you follow them, you will be able not only to improve the quality of your life, but more importantly, the quality of the life of the nation.

It is significant fact of history that our culture has survived 5000 years when other cultures and civilisations have perished long ago and they are to be seen only in the pages of history or the archives of the museum. Indian culture is still a vibrant and living culture inspiring 1/7th of the human race and holding out a ray of hope in an otherwise dismal world riven by dissentions and conflicts. There is one reason more than any other which is responsible for the inner strength of this culture and that is that it is inspired by the twin ideals of **Tyag** and **Sewa**. These two ideals have been preached by our saints and sages since times immemorial and they have sustained Indian culture over the centuries. **Tyag** is nothing but renunciation of self-interest. It does not mean that you should give up the world and retire to a mountain or a cave. It means self-renunciation and not world-renunciation. We must do our work but without being attached to the fruit of that work. The position manifestation of **Tyaga** is sewa-service of humanity. It is only if you are imbued with the spirit of sacrifice and service that you will be able to build a strong and powerful India with equality of status and opportunity for all. We owe an obligation to the people of this country. There are a large number of people who are living a life of want and destitution, misery and suffering. Many amongst them do not even have two square meals a day or a roof over their head or even clothes to wear. These Daridra Narayans of India we have to serve. There is nothing greater than the service of the poor and the down-trodden. It was Swami Vivekananda who said almost 80 years ago "After all my austerity I have come to realise that there is only one God and he resides in every human being and service of man is service of God". The same message has been given to us in recent times by Mahatma Gandhi, the Father of the Nation. No one understood more deeply than he the dumb and mute agony of the people of India. There is an interesting dialogue between his and Gurudev Tagore which I must narrate to you. Once Gurudev Tagore asked Gandhi: "Gandhiji, are you so unromantic? When in the early dawn, the morning sun rises, does it not fill your heart with joy to see its reddish glow? When the birds sing, does not your heart thrill with its divine music? When the rose open its petals and blooms in the garden, does its sight not bring cheer to your heart?

Mahatma replied: "Gurudev, I am not so dumb or insensitive as not to be moved by the beauty of the rose or the morning rays of the sun or the divine music of the birds. But what can I do? My one desire, my one anxiety, my one ambition is: When shall I see the red tint of the rose on the cheeks of the hungry naked millions of my people? When shall I hear the sweet and melodious song of the birds in place of their agonising sighs—when will such music come out of their soul? And when will that day come, when the light of the morning sun will illumine the heart of the common man in India? When will I see its lustre and brightness on his face?" So identified was he with the miserty and suffering of his people that he espoused for himself a life of austerity and sacrifice. Let us follow the message of the Mahatma and even if we practice a fraction of what he said and live within our own lives even a small part of his message of service and sacrifice, we shall be able to make this country truly great. It is a great challenge which lies before you, indeed before the youth of this country. I have no doubt that with the education which you have received in this great University you will successfully meet this challenge and try to wipe, if not every tear from every eye, which is not possible, atleast a few tears. Do not ever forget the great message given by Jawaharlal Nehru the architect of modern India. "The service of India means the service of the millions who suffer. It means the ending of poverty and ignorance and disease and inequality of opportunity." Let us try to build a new India, India of the dream of Mahatma Gandhi and the vision of Jawaharlal Nehru..."☐

Special Number

On the occasion of the Annual Meeting of AIU, a Book Exhibition will be organized in Shillong, in collaboration with NEHU from February 26 to March 2, 1985. A Special Number of University News will also be taken out and sent to various educational institutes. Those interested in publicising their publications/scientific equipments, may please send the text of their advertisement to:

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Gauhati Organises Seminar on Commerce Education in North Eastern Region of India

A Seminar on Commerce Education in North Eastern Region of India was organised by the Department of Commerce, Gauhati University on 12th &13th December 1984. Inaugurating the Seminar Shri P.H. Trivedi, Secretary, North Eastern Council, Shillong, stressed the need for re-orientation of Commerce courses keeping in view the developmental needs of the region. Shri Trivedi also referred to NEC's increasing involvement in development of manpower resources of the Region and the Council's commitment to pursue the matter in future.

The Chief Guest Dr. J.M. Choudhury, Vice-Chancellor, Gauhati University, spoke of the growing importance of commerce education in the context of changing need of the Region. He informed the gathering of the developmental programmes undertaken by the University in view of the switchover to the 3-year Degree Course.

Dr. P.C. Goswami, Professor of Commerce, in his presidential address stressed the need for practical orientation of the commerce courses at the Degree level and urged for specialised courses at the postgraduate level. Dr. Goswami raised the issue of demarcation of commerce discipline as a professional, semi-professional or humanities course.

Earlier, while welcoming the guests and delegates Dr. D. Bhorali, Director of the Seminer, spelt out the objectives of the Seminar and pleaded for increasing facilities for spread of commerce education.

The meeting was addressed by Dr. S.K. Das, Professor of Commerce, North Eastern Hill University, Dr. K.P. Deb, Professor of Commerce, North Bengal University, Dr. B.C. Lahkar, Chairman, Secondary Education Council, and Sri O.P. Agrwala; Bongaingaon College.

The deliberations of the Seminar covered different aspects of commerce education, such as, development of commerce education in the Region, switch over to +2 Higher Secondary and 3-year Degree Course, re-orientation of commerce courses to prepare students for the Company Secretaryship, Cost Accountancy and Chartered Accountancy courses, re-orientation courses for commerce teachers, coordination and uniformity of commerce courses among the Universities of the Region and need for a common platform to discuss matters relating to commerce education from time to time.

Dr. D.D. Mali, Director, National Institute for Small Industries Extension Training, Dr. K.P. Deb, Professor, North Bengal University, Dr. B.C. Lahkar, Chairman, Higher Secondary Council, Dr. S.K. Das, Professor, NEHU, chaired the different business sessions of the Seminar.

Experts and academicians in Commerce contributed seminar papers and took active part in the deliberations.

Dr. S.N. Mehrotra, Professor of Commerce. Benaras Hindu University and Member, U.G.C. Panel of Experts in Commerce, delivering valedictory address, elaborated the objectives of commerce education at the +2 stage and at the 3-year degree stage. He emphasized that the high rate of wastage in higher education needed to be curbed. At the Degree level, Dr. Mehrotra emphasized that course contents should lay considerable stress on developing analytical skills relevant to the world of business and should be employment based so that most of the graduates who do not get the opportunity to pursue higher studies may readily find their way into different sectors of employment. At the postgraduate level the objective of commerce education should be to train the students for higher positions in priority sectors and in some cases preparing them for teaching and research. To achieve these objectives, highly specialised courses with sectoral orientation should be introduced at the postgraduate level.

Dr. A.K. Sarma, Dean, Faculty of Commerce, Gauhati University presiding over the Valedictory Session, urged the tcommerce teachers to strengthen the basic foundation of the students in the core areas. He reminded the teachers that they had a noble mission to achieve and that they should be proud of their profession. Dr Sarma called upon the teachers to free themselves form all inhibitions 'and love their profession with dedication and attachment.

The function ended with a vote of thanks by Dr. N.C. Das, Head of the Department of Commerce, Gauhati University.

JNU symposium on role of university in adult education

With the objective of bringing the university and the community closer, the Adult, Continuing Education and Extension Unit of the Jawaharlal Nehru University organised on 7th December, 1984 a Symposium on the Role of University in Adult Education. The Vice-Chancellor of the University, Prof. P.N. Srivastava, presided.

Initiating the discussion the Director of the Unit traced the background of the involvement of the UGC and the universities in the field of adult education and emphasised the important role that the university had to play in improving both knowledge and skills of the disadvantaged sections of society.

Dr. Amrik Singh and Shri Harish C. Khanna also spoke on the occasion. Dr. Amrik Singh emphasised that the universities would be doing a service to society by taking up programmes of adult education and thus bring about greater interaction between universities and the society.

Shri Harish C. Khanna pointed out that isolation of the university from the community needed to be bridged and an effective mechanism should be evolved so that knowledge in the shape of research findings generated in the universities percolaates to the masses. For this purpose he felt the media, especially TV and Radio, could play an important role.

Prof. P.N. Srivastava, Vice-Chancellor, JNU, supporting the idea of bringing the universities and the society closer drew the attention of the participants to the inter-dependence of education, economy and literacy. He further stated that the removal of illiteracy remained as one of the crucial aspects in the progress of the nation.

New department inaugurated at Devi Ahilya Vishwavidyalaya

Shri G. Jagatpati, Adviser to Chief Minister of Madhya Pradesh formally inaugurated the Department of Adult, Continuing Education & Extension Work of Devi Ahilya Vishwavidyalaya, Indore on 3rd January, 1985. In his address, he stressed the importance of continuing education and especially adult education. Citing an example, he said that the enormity of the Bhopal gas tragedy would not have been what it was had we succeeded in eradicating adult illiteracy. To remain vigilant, knowledge is important and to gather ture knowledge, one must come out of the shell of the four walls of academic institutions to the world as it is today. He also urged the University to induct rural areas in its plans and meet the demands of the rural people who are highly alert and perceptive as they had proved in the recent Lok Sabha elections.

Dr. Jayant Vishnu Narlikar, astrophysist and co-author of the Hoyle-Narlikar theory, delivered the first lecture on "Origin of the Universe" at the newly formed Department. He said, "if one counts the stars in our galaxy (Milkyway) at the rate of three stars per second, without stopping, he would take a minimum of thousand years to count all the stars in the galaxy, numbering somewhere from 100 to 200 billion, and there were many such galaxies in the Universe." In his thought-provoking lecture he unravelled several interesting features of the mysterious universe and its beginnings which baffled mankind since time immemorial.

Talking about Einstein's sacrosanct dream of uniting all the force of physics into a "unified theory", which remained unfulfilled in the life-time of the greatest scientist of the 20th century, Dr. Narlikar said some headway had now been made by Noble laureates like Weinberg and Abdus Salam, who have succeeded in uniting at least two of the four fundamental forces; Strong and weak interactions, electromagnetic and gravitational forces. In India too, work of paramount importance is being done by the T.I.F.R. team in Kolar gold fields in Karnataka where researches on proton decay are being conducted as an attempt to determine the "age" of the Universe.

Vice-Chancellor Dr. S.N. Dasgupta presided over the function and Prof. I.S. Mehta, Registrar, proposed the vote of thanks.

Prof Rao stresses qualitative changes in science education

Speaking at a press conference in Lucknow on January 2, 1985, Prof. C.N.R. Rao, Director, Indian Institute of Sciences, Bangalore and President-Elect, Indian National Science Academy, stressed the need of improving the 'quality' of science education in the country.

"Higher education in the field of science and technology should be selective. If not, the standard of science education will deteriorate rapidly", Prof, Rao pointed out.

He further said that "there is an acute shortage of brains in highly specialised sectors such as

Association of Indian Universities
AIU House, 16 Kotla Marg
New Delhi 110002

Applications are invited by the Association of Indian Universities (AIU) for the following posts in the Research Cell on prescribed forms obtainable from the AIU Office on payment of Rs. 2/- either in person or by sending a self addressed stamped envelope :

1. **Project Director (Economics of Education) : Rs. 1500-2000**
   The person should be knowledgeable in the field of Economics of Higher Education, and will be required to collect data and prepare norms and guidelines for NON PLAN (Maintenance) grants of various types of universities. He/she should also give adequate evidence of his/her capability, experience and capacity for independent work.
2. **Statistician : Rs. 700-1300**
   The person should have a first or high second class Master's Degree in Statistics/Mathematical Statistics and training in Computer Programming with three years experience of statistical analysis of data. Knowledge of computer programming essential.
3. **Research Assistant : Two Posts : Rs. 425-700**
   First or high second class Master's Degree in Social Sciences with at least 2 years experience in the area of research/published work. Training and experience in computer programming will be desirable.

The posts carry allowances admissible to AIU employees generally at Govt. of India rates.

Last date of receipt of application is **February 1, 1985**.

material science, Polymer technology and computronics". On the other hand he said, "there is a large number of science students having average qualification".

The country produces at least 2,000 Ph.Ds in Science every year. Out of them only 200 take up engineering while another 30 to 40 per cent go abroad, Prof. Rao added.

Commenting on the 'Brain Drain' of scientists, he said, "though there is a flow of export of brain, a still large number of efficient persons' brain could not be fully utilised".

The Government had allocated a sum of Rs. 30 crores for science education in the Sixth Plan. Prof. Rao hoped that this 'modest' amount would be increasrd in the Seventh Plan.

The University Grants Commission, Prof. Rao said, should be responsible for maintaining the quality of education. Our educational system is too examination-oriented and this should be done away with", he pointed out.

Expenditure on science research

About Rs 1430 crores is expected to be spent by India on Research and Development (R&D) activities relating to science and technology during the year 1984-85. This represents an increase of 23% over the expenditure incurred in 1981-82.

More than 2000 institutions, both in the public and private sectors, are engaged in R&D activities in India. About 87 per cent of this expenditure on R&D was incurred by the Government and the rest by private sector in 1982-83. The Centre met 90 percent of the expenditure incurred by the Government and the rest was met by the State Government. Two-thirds of the expenditure met by the Centre came from agencies like CSIR, ICMR, etc. The other one-third came from Union Ministries.

Of the total manpower engaged in R&D, one-fourth were directly involved in research, a little less than half were engaged in auxiliary activities and the rest were providing administrative and non-technical support.

The VI Plan allocation for science and technology was about Rs. 3406 crores. More than one-fifth of this allocation was earmarked for agriculture and irrigation.

New Vice-Chancellor of University of Burdwan

Prof. S.P. Banerjee

Prof. S.P. Banerjee who took over as Vice-Chancellor of the University of Burdwan some months ago was born on September 2, 1930. He obtained his M.A. and Ph D. degrees from Calcutta University. He did his Ph.D. in Philosophy—specially Philosophy of Man, Society & History.

He was Lecturer in Undergraduate Colleges from August 1953 to August 1965; Lecturer and Assistant Professor, I.I.T., Kharagpur from August 1963 to September 1968; Reader & Head, Department of Philosophy, North Bengal University from September 1968 to June 1969; Reader, Calcutta University from July 1969 to May 1975; Registrar, Calcutta University from May 1975 to November 1978; Professor & Head, Department of Philosophy, Calcutta University from November 1978 (on lien); Joint Secretary, Ministry of Education & Culture, Government of India from November 1, 1983 to June 14, 1984.

He was awarded Sarada Prosad Prize, Ramtanu Lahiri Gold Medal, Stephen Memorial Medal, William Smith Prize etc.

He is a Life Member of the Indian Academy of Philosophy, Calcutta; Member of the Council, Governing Body and the Research Project Committee of the Indian Council of Philosophical Research, New Delhi; Visitor's (President of India) nominee in the North-Eastern Hill University, Shillong, the University of Delhi, Visva Bharati, Santiniketan and Member, Board of Trustees, Auroville.

He has published more than 40 papers and two books. He has attended about 50 regional, national and international seminars, symposia etc. He went on invitation to Oxford in 1983 to participate in and present a paper on "Current Trends in Indian Social Thought".

Second international symposium on life sciences at NEHU

School of Life Sciences, NEHU will host the second international symposium on life sciences in Oct-Nov., 1985. About eighty scientists from Asia, Europe and America are expected to attend the symposium on **Current trends in Environmental Biology**. Discussions will centre around the following areas : Diversity of the living system; Life and living systems including metabolic regulations; Framework of life; Integrative mechanisms in living systems; Reproduction and reproductive mechanisms; Bioenergetics, Cybernetics and Entropy; Cell Biology and Genetics; Molecular Biology and Molecular Genetics; Defensive mechanisms in life; Environmental Biology; Behavioral aspects of life; Pests, Parasites and Pathogens; Biology of Insects; Fresh Water Biology, and Life sciences in service of Man.

Challenges and opportunities of economic development: role of universities

Speaking on the above subject under the auspices of the Department of Economics of the Devi Ahilya Vishwavidyalaya Shri G. Jagatpati, Advisor to the Chief Minister of Madhya Pradesh, called on the academic institutions to devote themselves to formulate models of national economy keeping in view a speedier development of the country. The challenges of the new age had necessitated an inter-disciplinary approach towards problem solving.

Mr. Jagatpati said that keeping in view the importance of joint efforts in economic development, the State Council for Science and Technology has included within its ambit the social sciences as well so as to chalk out a strategy of fruitful co-existence between natural and social sciences.

He suggested that a common multipurpose data centre could be established at the various universities so as to promote fruitful researches bearing local, regional and national angles of economic development.

The Universities could as well provide common theoretical frameworks for the economy in which the environmental factors could be incorporated as of paramount importance.

He further said that it was time we understand that instead of a "grand national product oriented approach" "we would better have changed over to the "direct beneficiary approach". Our emphasis should now shift from "economy to man" to "man to economy".

The example of the success of the green revolution in Punjab and a resultant development of small scale industries in the rural areas should be emulated by other states as well, he said.

In fact, the green revolution had proved that no industrial development was possible without a prior agricultural development in a particular area.

JNU entrance examination in May

The entrance examination for admission to various full-time programmes of study of the Jawaharlal Nehru University will now be held in May instead of February, 1985. This has been done in deference to the requ-

MINISTRY OF HOME AFFAIRS AWARD OF RESEARCH FELLOWSHIPS IN VARIOUS ASPECTS OF TRIBAL DEVELOPMENT

Applications in the prescribed form are invited for the award of Doctoral and Post-Doctoral Research Fellowships in various aspects of tribal development from research scholars with a background of social Sciences, Agriculture or Medicine etc., and who are already registered for Ph.D. with a recognised University. The study will be field oriented with obligation to work in tribal villages, if necessary.

The terms and conditions governing the grant of fellowships will be as under:

Period of Fellowship : For both post-doctoral and doctoral fellowships, the period of fellowship will ordinarily be two years which may be extended upto a maximum of three years. If a candidate availing of the fellowship chooses to discontinue without submission of the thesis he will be required to refund the fellowship amount drawn.

Rate of Fellowship : (i) The amount of post doctoral fellowship will be Rs. 800/- per month and of doctoral fellowship Rs. 600/- per month.

(ii) The fellowship will also carry an annual contingency grant of Rs. 3000/- for the post-doctoral and doctoral stages for meeting approved contingent expenditure connected with the research study.

Application typed in the format given below (alongwith copies of the certificates, papers published and certificate from the employer, in case of employed candidates), and duly forwarded by the Head of the Department of University where registered, must reach latest by 31 January 1985 to the Director, Tribal Research Institute/the Director, Social Welfare /Director Tribal Welfare of the State in which the field work is proposed to be conducted with an advance copy to the Joint Director, (Research) Ministry af Home Affairs, T.D. Division, Lok Nayak Bhavan, 4th Floor, 'B' Wing, New Delhi-110 003.

Format : (a) Name (in block letters), (b) Father's Name, (c) Age and date of birth, (d) Present Address, (e) Permanent Address, (f) Qualifications, giving full details chronologically of examinations passed with credits, if any, (g) Experience giving details of working experience and research experience, as also the papers published, if any, (h) Name of the University where registered, (i) Name of the Degree (Doctoral/ Post-Doctoral) for which registered, (j) Date of registration (k) Subject of study (Please enclose three copies of the synopsis), (l) Name and designation of the Guide/Supervisor, and (m) Whether already in receipt of any other fellowship/ Scholarship (if yes, state the name, amount and duration of fellowship.)

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ests from a large number of candidates and examining bodies to enable more students in different parts of the country to take part in the examination. The examination which was to be held from February 8 to 11, 1985 will now be held from May 24 to 26, 1985 at different State centres.

The last date for submission of completed application forms has also been extended to April 15, 1985 to give more time to the students. The application forms will be issued upto April 8 and the last date for the receipt of completed application forms will be April 15, 1985.

Candidates who have already submitted their applications need not apply again.

SV University to have a museum

The Sri Venkateswara University proposes to set up a science museum on the lines of the Visveswaraya Science Museum in Bangalore, it is reported.

800 hectares of land has already been earmarked for the purpose, it is reported. When full-fledged, the museum would have 50 units covering various faculties.

Workshops for applied component courses at Indore

Four workshops, on the following new subjects were organised for college teachers of the Devi Ahilya Vishwavidyalya, Indore:

(1) Computer Science; (2) Analytical Instrumentation; (3) Numerical Analysis; (4) Fisheries.

20 to 25 teachers participated in each of the above workshops. These teachers will teach the above applied components courses to the B.Sc. students from the academic session 1985-86.

More workshops will be organised during the summer vacation for other applied component courses like Electronic Instrumentation, Drugs & Dyes, Forestry, Industrial pollution, Linear programming, Operational Research, Applied Geology, Insurance, Banking, Personnel Management, Project Planning, Social & Tribal Welfare, Tourism and Hotel Management.

The purpose of these applied component courses is to provide sufficient training to the students in the applied subjects to enable the pass-outs to be qualified for appropriate jobs. The University is interested in maintaining high standards and quality of instructions imparted in the new applied courses to ensure suitability of the pass-outs for appropriate employment.

University Grants Commission has sanctioned Rs. 3 lakhs to the University for Restructuring of the courses at under-graduate level.

Special convocation held at AMU

A special convocation was held by the Aligarh Muslim University on November 29, 1984 to confer the Degree of Doctor of Science (Honoris Causa) on Professor Obaid Siddiqi FNA, FRS.

Por. Siddiqi is Professor of Molecular Biology and Head of Molecular Biology Unit at the Tata Institute of Fundamental Research. His outstanding contributions have been in the fields of Microbial, molecular genetics and neurogenetics of chemosensory perception in *Drosophila*.

Rules for Institution of Cash Award in the Fields of Forestry and Forest Sciences

With a view to create incentives for high quality, fundamental or applied research amongst the Forest Officers, Forest Scientists and Research Scholars engaged in different Agricultural Universities in India and to encourage originally of thought, experimentation, precision and sense of priority in the choice of topics for research. The scheme aims at providing the following four annual awards of Rs. 5,000/- each to be awarded annually in the following fields of research :—

(i) Forestry including Silviculture, Forest Ecology, Forest Soils, Logging, Forest Economics, Minor Forest Products, Chemistry of Forest Products, Forest Genetics and Forest Statistics.

(ii) Biological Research including Forest Botany, Forest Pathology, Forest Entomology, Forest Physiology, and Wood Anatomy.

(iii) Forest Products Utilisation Research including Timber Mechanics, Timber Seasoning, Timber Engineering, Composite Wood, Wood Preservation, Cellulose and Paper, Wood Working Saw Milling.

(iv) High quality fundamental or applied Research.

2. The entitlement of the award shall be judged from the published works of the Scientists/team of scientists through books, monograph, papers or other forms of published account of outstanding research work including inventions and discoveries. The results of research/contributions made through published work in the year preceding to year of the award shall only be considered.

3. Nominations for the award will be invited by the President, Forest Research Institute and Colleges, Dehra Dun from all the Scientists engaged in research in the fields of forestry and allied sciences in India through an open advertisement in all the leading newspapers throughout the country.

4. Nominations for the award can be made by the Chief Conservator of Forests/Directors/Coordinators working at the Forest Research Institute & Colleges/Vice Chancellors of agricultural and other Universities having faculty of agriculture or biological sciences. The nomination for the award should be supported by a statement of work, achievements that are performed by the candidate who is being nominated. Justification for the nomination togetherwith reprints of publications with other supporting data.

5. There is no prescribed proforma for making the nominations and applications for the award justifying the claim may be sent on plain paper.

6. The nomination so received shall be judged by a Committee to be appointed by the Inspector General of Forests whose decision will be final.

7. There will be no appeal against the decision for these awards.

8. The award shall not be made to the same person in the consecutive years.

Applications for the award will be received upto **31-1-1985** in accordance with the procedure indicated in clause 4 of Rules.

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State Govt. aid to Sri Krishnadevaraya Varsity

The State Government of Andhra Pradesh, it is reported, has agreed to sanction the matching share of Rs. 36.5 lakhs to the Sri Krishnadevara ya University, Anantapur for its Sixth Plan building schemes approved by the University Grants Commission. The UGC, it is reported, has already sanctioned a sum of Rs. 46.75 lakhs towards the scheme.

The building works include hostel for boys and girls, health centre, gymnasium, faculty club-cum-guest house and extension of science blocks.

The State Government, it is reported, has also agreed to meet the recurring expenditure of 41 teaching posts to the extent of Rs. 10 lakhs per annum.

News from Agril. Varsities

Union Agriculture Minister at PAU

Shri Buta Singh, Union Minister for Agriculture and Rural Development said that it was heartening to learn that Punjab had produced 95 lakh tonnes of wheat during the last year despite troubled conditions in the State. He appreciated the role of agricultural scientists of the Punjab Agricultural University who created an awareness among the farmers of the State about the new farm technology, as a result of which the State achieved record food production target. These efforts should continue, he added.

Shri Buta Singh was addressing the Deans, Directors and Heads of the Departments of PAU on 5th January. He laid emphasis on national integration and communal harmony which was the need of the hour and no progress was possible without it.

Dr Khem Singh Gill, Director of Research of the University welcomed the Minister and highlighted some of the academic, research and extension education activities of the University. He told that the University had the finest herd of cross-bred cows and high producing buffaloes. A cross-bred cow could yield 4000 litres of milk in a lactation period of 300 days. Harvesting of wheat and transplantation of paddy was fully mechanised in the State, he added.

Research achievements of HAU in 1983-84

Different research groups for different research problems have been constituted at HAU to tackle various research problems. Each group will act under the guidance of a coordinator. Giving an account of the research achievements of University in different disciplines made during 1983-84 Dr. R.P.S. Tyagi, Director of Research, HAU, said recently that seven crop varieties of wheat, barley, moong, gram, raya had been released, and thirteen new promising varieties of cotton, barley maize, moong, urd, soyabean and forage crop had been identified for release in the State. Under the seed production programme, the University produced 5000 quintals of breeder and foundation seeds of various rabi crops and further distributed this seed to various seed multiplication agencies.

Dr. Tyagi further revealed that in the field of vegetable seeds, and fruit and tree plant saplings during the rabi-1983-84 vegetable seeds worth Rs. 2.31 lacs, 70,000 nursery saplings of fruit plants and more than one lac saplings of eucalyptus, poplar, jand and shisham were supplied to the interested farmers of the State. The Department of Soils of the University analysed 21,000 soil and water samples at its four different soil testing laboratories in the State. Similarly the Microbiology Department supplied nearly 1.72 lakhs packets of bacterial cultures for seed inoculation of pulse crops.

Indian Council of Philosophical Research
Guru Nanak Foundation Building, 4th Floor,
New Mehrauli Road, New Delhi-110067.

(An autonomous organisation set up and fully financed by the Ministry of Education & Culture, Govt. of India)

Indian Council of Philosophical Research announces the decision to award Senior Fellowships and General Fellowships for undertaking research in Philosophy during 1985-86. However, preference would be given to the Council's priority areas.

Applications for the award of the Fellowships should be submitted in the prescribed form which may be obtained from the Council's office by sending a self-addressed envelope of size 25 cm. x 11 cm., affixed with Postage Stamp of 0.90 Paise, latest by **15th February, 1985.** The applications complete in all respects should reach the Council latest by **28th February, 1985.**

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Sports News

Kobe Universiade

AIU Selects Football Probables

AIU has selected the following 24 probables in connection with the preliminary round Football match of the Kobe Universiade to be played between Indian Universities XI and the Chinese Universities XI in Delhi on Jan. 31, 1985. The selection was made as a result of holding the trials at the NIS Patiala on January 1, 2 & 3, 1985.

The final team may be selected 10 days before the first match.

S.No.	Position	Name	University
1.	G.K.	Shri S. Joshi	Vikram
2.	G.K.	Shri A. Koya	Calicut
3.	G.K.	Shri K. Kabui	Manipur
4.	R.B.	Shri S. Saini	Jabalpur
5.	R.B.	Shri P. Das	Burdwan
6.	S.B.	Shri Paramjit Singh	Panjab
7.	S.B.	Shri D. Konar	Burdwan
8.	S.B.	Shri B.C. Kapri	Jiwaji
9.	S.B.	Shri Balkishan	G.N.D.U.
10.	L.B.	Shri Sanjay Shukla	Aligarh
11.	L.B.	Shri G. Varghese	Kerala
12.	R.H.	Shri Jag Mohan Singh	Panjab
13.	L.H.	Shri N.W. Costa	Bombay
14.	R.H.	Shri Santosh Kumar	Delhi
15.	L.H.	Shri Amit Sur	Burdwan
16.	O.R.	Shri Kulbir Singh	G.N.D.U.
17.	O.R.	Shri Pappaemau C.V.	Calicut
18.	I.R.	Shri S. Mazumdar	Burdwan
19.	I.R.	Shri Amrit Pal Singh	G.N.D.U.
20.	I.L.	Shri A. Nizar	Kerala
21.	O.L.	Shri Mustaq Ali	Rohilkhand
22.	O.L.	Shri R.M. Salokhe	Shivaji
23.	O.R.	Shri S. Sen Gupta	Jiwaji
24.	O.L.	Shri R.C. Hausda	Ranchi

Inter-University Athletic Meet

Allahabad University won the All-India Inter-University Athletic Championship (Men Section) organised by the Jiwaji University, at Gwalior from 29th December, 1984 to 1st January, 1985 securing 22 points. Kurukshetra University and Kerala University were 2nd and 3rd securing 20 points and 17 points respectively. In women section, however, the title was won by the Calicut University securing 45 points. Bangalore University and Gandhiji University secured 23 and 17 points respectively getting 2nd and 3rd positions.

A total number of 78 universities participated in men section and 49 universities in women section. The participation figure was 1004 athletes — 725 men and 279 women.

News from Abroad

Malaysian collaboration with British Universities

Under a "twinning scheme", for which discussions have already been held between Malaysia and Britain at ministerial level, Malaysian students would spend the final year of their degree programmes at British Universities.

One thousand students have been selected for the scheme already, it is reported. These students will begin courses at Malaysian Universities and then apply for places in Britain for September 1987, if the plan goes ahead. Some essentials of the scheme like who would pay for the students for their study in Britain and which British University would award the degree are yet to be decided.

Malaysia has already similar arrangements with United States Universities and U.S. Universities award their degrees. Malaysia is likely to press for similar arrangements with Britain. It is reported however that Mr. Jack Butterworth, Vice-Chancellor of Warwick University and Chairman of the Council's Committee for International Cooperation in higher education has said that he thought degrees would have to be awarded by the Malaysian Universities.

[Courtesy: Times Higher Education Supplement, January 4, 1985]

We Congratulate..

Prof. C.N.R. Rao, Director, Indian Institute of Science, Bangalore, who has been elected President of the Indian National Science Academy for the year 1985.

AIU Library & Documentation Services

One of the important functions of the Association of Indian Universities is to act as a clearing house of information on higher education in the country. Towards this end the AIU Library is engaged in collection building and developing instruments for the dissemination of research information. Over the years a valuable collection of books and documents on different aspects of higher education has been acquired.

The Library has also developed Bibliography of Doctoral Dissertations as an effective tool in the dissemination of research information. Retrospective bibliographies covering the period 1857-1970 and 1970-75 were the first to appear. Effective 1975, however, the bibliography is issued annually in two volumes. One volume deals with Natural and Applied Sciences while the other records doctoral degrees awarded in Social Sciences and the Humanities. In addition to the normal bibliographical details like the name of the Research Scholar, the title of the thesis, years of registration for and award of the degree, and the name of the University accepting the thesis for award of a doctoral degree, the bibliography also gives name and complete address of the supervising teacher and an availability note that seeks to inform whether a copy of the dissertation is available for consultation and use in the University Library/Department or Registrar's Office.

The columns 'Theses of the Month' and 'Research in Progress' are intended to cut out the time lag between the receipt of information and its inclusion in bibliography. Such Universities as are not sending us regular information in respect of Doctoral Theses accepted and research scholars enrolled are welcome to make use of these columns.

The Library is situated at 17-B, Indraprastha Marg, New Delhi-110002. It is open from 10 a.m. to 5 p.m. Monday through Saturday except Second Saturday.

RESEARCH IN PROGRESS

A list of Research Scholars Registered for Doctoral Degrees of Indian Universities

PHYSICAL SCIENCES

Mathematics

1. Babykutty, Y. *Functional analysis (Operator Theory)*. U Ker, Trivandrum. Dr. M.N. Narayanan Namboodiri.

Physics

1. Ahmed, Ali H.A.Z. *Polymer physics*. U Delhi. Prof. V.S. Nanda and Dr. P. C. Jain.
2. Jamadar, Vajir Mohamad. *Studies on ferro-electric solid solutions of $CaTiO_3$, $SrTiO_3$ $BaTiO_3$ and $PbTiO_3$* Shivaji U, Kolhapur. Dr. S.H. Chavan.
3. Anusuya, Prasad. *High energy physics*. U Delhi. Dr. R.K. Shivapuri.
4. Rajesh Kumar. *Study of defects in semiconductors*. U Delhi. Dr. G. C. Trigunayat and Dr. B.K. Das.

Chemistry

1. Dube, Neelam. *Vibrational spectra, normal coordinate analysis and torsional potential functions of some polyatomic molecules*. Devi Ahilya, Indore. Dr. Rajendra Prasad.
2. Kurup, P. Chandra. *Coordination chemistry*. U Delhi. Dr. B.S. Garg.
3. Pandey, K.K. *Activation of unstable small inorganic molecules: Coordination chemistry of NS, NSO, NSO_2, SO and S_2O. D.Sc.* Devi Ahilya, Indore.
4. Sharma, S.D. *On the interactivity of alkali cations during aldehydealkali reactions*. Devi Ahilya, Indore. Dr. N.S. Poonia.
5. Syed Mushtaq Ali. *Stereochemistry and thermal bahaviour of some metal hydroxamates*. Devi Ahilya, Indore. Dr. P.V. Khadikar.
6. Vasudeorao, Mohite Chanorakant. *Analytical applications of coumarin derivatives*. Shivaji U, Kolhapur. Dr. D.S. Amberdekar.

Earth Sciences

1. Girijesh Kumar. *Marine metallic sediments*. U Delhi. Dr. G.S. Roonwal.

Engineering & Technology

1. Kabra, Vijay Kumar. *Mechanism of solid state transformations in Inorganic structures*. BHU, Varanasi. Prof. S. Lele and Dr. D. Pandey.
2. Gangopadhyay, Dipak Kumar. *Ferroelectric ceramics*. BHU, Varanasi. Dr. D. Pandey and Dr. Om Prakash.
3. Pandey, Awadh Bihari. *Rapid solidification*. BHU, Varanasi. Prof. P. Ramachandra Rao and Dr. C.V.S. Sastry.
4. Pandey, Venkateshwar. *Metastable phases*. BHU, Varanasi. Prof. P. Ramachandra Rao and Prof. S. Lele.
5. Veerendra Kumar. *Plastic analyses of R.C. structures*. BHU, Varanasi. Prof. B.N. Roy.

BIOLOGICAL SCIENCES

Anthropology

1. Mathur, Sunita. *Structural and cultural dimensions of intra-household relationships among rural women in Delhi*. U Delhi. Prof. J. D. Mehra and Dr. V.C. Channa.

Marine Sciences

1. Madhusoodanan, K.C. *Studies on certain ecological aspects of two river systems of western ghats*. U Ker, Trivandrum. Dr. K. Suryanarayanan.
2. Prasanth Kumar, M.S. *Studies on the fishes of Veli Lake with special reference to their biology*. U Ker, Trivandrum. Dr. K. Suryanarayanan.

Biochemistry

1. Kumudesan, N. *Studies on the biochemical effects of cerebera odolla*. U Ker, Trivandrum. Dr. P.A. Kurup.

Botany

1. Chaturvedi, Sugandh. *A botanical study of marine plants*. BHU, Varanasi. Dr. J.K. Ojha.
2. Jain, Jugnu. *Physiology and biochemistry of plant development*. U Delhi. Dr. S. C. Maheshwari.

Medical Sciences

1. Singh, Onkar Nath. *Formulation, bioavailability and pharmacokinetics of pharmaceutical dosage forms of drugs of industrial importance*. BHU, Varanasi. Dr. S.B. Jayaswal.

THESES OF THE MONTH

A list of Doctoral Theses Accepted by Indian Universities

PHYSICAL SCIENCES

Mathematics

1. Binod Kumar. *Some contributions to the theory of topological tensor products of some special types of locally convex spaces*. Mag U, Bodh Gaya.

2. Das, Harendra Ch. *Flow problems on drag reducing fluits*. Dibrugarh U.

3. Gaud, Brij Mohan. *Some problems on the flow of an elastico viscous Walters liquid 'B'*. Avadh U.

4. Guha, Bandana. *A study of transform analysis and special functions with applications*. RSU, Raipur.

5. Jain,Vijay Kumar. *Some ranking and selection procedures for more than one parameter populations*. IIT, Delhi.

6. Jaisraj Singh. *Further development of control charts and acceptance samples plans*. Dibrugarh U.

7. Jha, Amarnath. *On infinite matrices over non-archimealean fields and summability processes in non-archimealean banach spaces*. Bihar U, Muzaffarpur.

8. Mishra, Bijoy Kumar. *Flow analysis of non-Newtonian fluid*. Utkal U, Bhubaneswar.

9. Narvilkar, Dilip K. *Solutions of hydrodynamical models in internal ballistics of guns*. U Poona.

10. Roy, Pijush Pal. *Application of finite element technique in some elastic problems*. ISM, Dhanbad.

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MADURAI KAMARAJ UNIVERSITY

Madurai-625021

Admission to Master of Business Administration (M.B.A.) (Full time)—1985-86

Applications are invited for admission to Master of Business Administration (M.B.A.) (Full time) Degree course conducted in the Department of Management Studies, Madurai Kamaraj University for the year 1985-86.

Eligibility: Any Bachelor's degree candidate with a minimum of 50% of marks in the Humanities (including Commerce and Business Administration) and Social Sciences and 55% of marks in other disciplines like Natural Science including Mathematics and Professional courses like Engineering.

Those who are appearing for their final degree examinations in April/May, 1985 may also apply.

Requisition of Application: A requisition for application form enclosing a State Bank of India Challan for Rs. 35/- drawn in favour of Madurai Kamaraj University Account No. 1 Or a Crossed Bank Draft drawn in favour of "The Registrar, Madurai Kamaraj University" payable at Madurai.

Postal Orders, Money Orders and Cheques will not be accepted.

An entrance test will be held during February, 1985. There will be a Group discussion and personal interview for the admission to M.B.A. (full-time) degree course. The admission to the course will be based on the academic record of the candidate, the results of the entrance test, group discussion and personal interview including the assessments made for co-curricular activities. The candidates will be called for group discussion and personal interview based on their academic record and performance in the entrance test; and the University reserves itself the right to decide in this regard. The date and place of entrance test, group discussion and personal interview will be intimated to the candidates by post. Candidates shall appear for entrance test and the interview at their own cost.

Last date for receipt of requisition in the University for application forms: **31st January 1985.**

Last date for receipt of filled in application forms: **4th February 1985.**

Late applications will not be accepted. The University is not responsible for any delay or loss in postal communication.

P.P. CHINNADURAI
REGISTRAR

CLASSIFIED ADVERTISEMENTS

PUNJABI UNIVERSITY

PATIALA

Advertisement No. 66/PRO/Estt./ Jan. 1985.

Applications are invited for the following posts:

1. **Professor in Linguistics:** (One)

(Grade : Rs. 1500-60-1800-100-2000-125/2-2500)

Qualifications

An eminent scholar with published work of high quality actively engaged in research. About ten years experience of teaching and/or research. Experience of guiding research at doctoral level.

OR

An outstanding scholar with established reputation who has made significant contribution to knowledge.

Specialisation

Punjabi Linguistics, Phonetics, General Linguistics and Lexicography.

2. **Readers :** (Three each in Law and Business Management & one in Chemistry (Organic)

(Grade : Rs. 1200-50-1300-60-1900)

Qualifications

Good academic record with a doctoral degree or equivalent published work. Evidence of being actively engaged in (i) research or (ii) innovation in teaching methods or (iii) production of teaching materials.

About five years' experience of teaching and/or research provided that atleast three of these years were as Lecturer or in an equivalent position.

This condition may be relaxed in the case of candidates with outstanding record of Teaching/Research.

Note

In case no suitable candidate is found for the posts of Readers in Law, the Selection Committee can recommend appointment of Lecturers against the two posts of Readers, having following specialization:

1. Labour Laws.
2. Income Tax Laws.

Additional qualifications for this post

Reader in Law (Punjabi Cell) : 1

1. M.A. (Punjabi) 2nd division

2. Legal experience : 10 years out of which experience of translation should be atleast for five years.

3. Knowledge of drafting/vetting rules, regulations & ordinances in Punjabi preparing legal terminology on different subjects of Law and preparing legal dictionary etc.

Specializations

Readers in Business Management : 3

(i)Reader (International Marketing)

Experience of teaching post-graduate management classes in international trade and marketing. Candidates having sound knowledge of economic, statistical and econometric tools will be preferred.

(ii) Reader (Finance)

Experience of teaching post-graduate management classes in working capital, financial institutions and small scale industries.

(iii) Reader (Marketing)

Experience of teaching post-graduate management classes in marketing research, and industrial marketing.

2. Candidates having experience of handling correspondence courses in management field will be preferred.

3. **Lecturers**

(Two each in Physics and Human Biology and one each in Chemistry, Nuclear Science Laboratory, English, Centre for Research in Social Change and Directorate of Punjabi Planning & Development).

(Grade : Rs. 700-40-1100-50-1600)

Qualifications

(a) A Doctorate's degree or research work of an equally high standard; and

(b) Good academic record with at least second class (C in the seven point scale) Master's degree in a relevant subject from an Indian University or an equivalent degree from a foreign University.

Having regard to the need for developing inter-disciplinary programmes, the degrees in (a) and (b) above may be in the relevant subjects.

Provided that if the selection committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may relax any of qualifications prescribed in (b) above.

Provided further that if a candidate possessing a Doctor's degree or equivalent research work is not available or is not considered suitable, a person possessing a good academic record (weightage being given to M.Phil or equivalent degree or research work of quality) may be appointed provided he has done research work for at least two years or has practical experience in a research laboratory/organisation on the condition that he will have to obtain a Doctor's degree or give evidence of research of high standard within eight years of his appointment, failing which he will not be able to earn future increments until he fulfils these requirements.

Note

For the post of Lecturer in English the words "or has practical experience in a research Laboratory/organisation" appearing in the last paragraph shall not be applicable.

Specializations

Lecturer in Physics

First or high second class M.Sc. in Physics/applied Physics with specialization in Electronics, followed by:

(i) Post-M.Sc. course in Electronics and Television Engineering;

OR

(ii) M.Tech. Course in Electronics;

OR

(iii) Sufficient practical/teaching experience in Electronics

OR

B.E. (Electronics) in first/high second division. The applicant should be able to do M.E. in Electronics within a period of five years.

Lecturer in Chemistry

Inorganic Chemistry.

Lecturer in Human Biology

For the first post : Senescence of Body morphology, physique and body composition.

For the second post : Candidate should have specialised in Social Anthropology/Sociology at post graduate level and should also have sufficient knowledge to teach prehistoric Archaeology to the post-graduate students.

Lecturer (Nuclear Science Laboratory)

Experimental Radiation Physics.

Lecturer in English

Victorian Poetry with special reference to the Poetry of Robert Browning.

Lecturer (Centre for Research in Social Change)

Political Sociology

Lecturer (Directorate of Punjabi Planning & Development (Pbi)

Punjabi Fiction

4. **Lecturer in Dramatic Art :** (Two)

(Grade : Rs. 700-40-1100-50-1600)

Qualifications

(a) Good academic record. Should have passed Diploma Course from National School of Drama/2-years Diploma in Dramatic Art from any recognised University/Institute followed by Master's degree in second class in the allied subjects such as Music, Dance Literature or Social Sciences.

(b) Two years research or professional experience or evidence of creative work and achievement in his field of specialisation or a combined research and professional experience of three years in the field as an artist of outstanding talent.

OR

A traditional or a professional Artist with highly commendable professional achievement in the subject concerned.

Specializations

Selecting Music for Theatre for one post and Acting for the other.

5. **Lecturer in Russian :** (One)

(Grade : Rs. 700-40-1100-50-1600)

The qualification for this post shall be the same as given in (a) and (b) as also Sub-para Ist and 2nd for the post of Lecturers in other subjects shown at Sr. No. 3 except the last paragraph which shall be as under:

Provided further that if a candidate possessing a Doctor's degree or equivalent research work is not available or is not considered suitable, a person possessing a good academic record may be appointed provided he has done one year post M.A. diploma course in the teaching of foreign language concerned from a University on the condition that he will have to obtain a Doctor's degree or give evidence of research work of equivalent high standard within eight years of his appointment failing which he will not be able to earn future increments until he fulfils these requirements.

Specialization

Russian Linguistics and Comparative Literature (Russian and English)

6. Directorate Nuclear Science Laboratory

Research Associate: (One) @ Rs. 700/- p.m. fixed for a period of 2 years.

Qualifications

Candidate should be first class M.Sc. (Physics/Applied Physics) Preference will be given to those holding M.Phil degree.

7. Research Scholar in Physics: (One)

(Tenable for two years in the first instance @ Rs. 600/- p.m. fixed).

Qualifications

Junior Fellowship is open to persons preferably below the age of 30 years, who have obtained a Master's degree of a recognised University in the first or high second division (with at least 55% marks or B+in the seven point grade system.)

8. Junior Research Fellow in the Department of Economics: (UGC) : Two
(@Rs. 600/- p.m. (fixed)

Qualifications

Same as for the post mentioned at Sr. No. 7.

Note

For the post of Readers & Lecturers, good academic record will be determined as under:

(i) A candidate holding a Ph.D. degree should possess atleast a second class Master's degree, or.

(ii) A candidate without Ph.D. degree should possess a high second class Master's degree and second class in the Bachelor's degree; or

(iii) A candidate not possessing Ph.D. degree but possessing second class Master's degree, should have obtained first class in the Bachelor's degree.

General

Candidates for teaching & research posts should possess working knowledge of Punjabi upto Punjabi Praveshka standard. Persons from outside Punjab could however be considered for appointment but they will be required to give an undertaking in writing that they will acquire the requisite qualifications in Punjabi within a period of two years.

Higher start within the grade admissible depending upon the ability and experience of the candidate. House rent and Dearness allowance, Provident Fund and Medical facilities according to University rules.

Applications complete in all respects on the prescribed form accompanied by a crossed Postal Order worth Rs. 5/- (Rs. 2/- for candidates belonging to Scheduled Castes/Tribes & Backward Classes) drawn in favour of the Registrar, Punjabi University, Patiala, should reach the University by **27th January, 1985.** The forms can be had from the Production & Sales Officer, Publication Bureau, Punjabi University, Patiala on payment of Re. 1/- by sending a crossed Indian Postal Order drawn in favour of the Registrar, Punjabi University, Patiala alongwith a self addressed envelope of the size of 25× 10cms. stamped with Rs. 1.70 postage which should be superscribed at the top in bold letters REQUEST FOR APPLICATION FORM FOR THE POST OF————.

Persons already in service should apply through proper channel. Those who are not in a position to submit their applications through proper channel before the due date should submit an advance copy before the due date and regular applications through proper channel by **29th January, 1985.**

D.S. Kang
REGISTRAR

PANJAB UNIVERSITY
CHANDIGARH
(Advertisement No. 12/84)

Applications are invited for the following posts so as to reach the Registrar, Panjab University, Chandigarh, alongwith postal orders of Rs. 10/- by **31-1-1985**. Fourteen days extra time is permissible to persons who have to submit their applications from abroad:

1. **Professor** : (Rs. 1500-60-1800-100-2000-125/2-2500).
   Statistics - 1.
2. **Lecturer-cum-Assistant Librarian** : (Rs. 700-40-1100-50-1600).
   Library Science -1.
3. **Lecturers:** (Rs. 700-40-1100-50-1600)
   Sociology-1 (Directorate of Correspondence Courses).
   Panjabi-1 (P.U. Evening College).

Candidates for the post of Professor who do not possess a doctoral degree are required to submit 10 typed/cyclostyled copies of brief resume of their published work. 15% posts of Lecturers will be reserved for the members of the Scheduled Castes and 7½% for the members of the Scheduled Tribes, but these will be filled up by others if no suitable Scheduled Castes/Scheduled Tribes applicant is available.

Application forms, alongwith detailed qualifications and instructions etc., can be obtained from the Cashier, Panjab University, Chandigarh personally on payment of Rs. 2/- or by making a written request to the Deputy Registrar (Estt.), Panjab University, accompanied by self-addressed stamped envelope of 23×10cms and a postal order of Rs. 2/- drawn in favour of the Registrar, Panjab University, Chandigarh.

For details see instructions for candidates enclosed with the application forms.

MAHARSHI DAYANAND UNIVERSITY
ROHTAK
Advertisement No. 1/85

Applications on plain paper (through proper channel in case of those who are already employed) are invited for the following posts:—

1. Reader in Psychology

Qualifications

Consistently good academic record, first or high second class Master's degree in the subject, Doctoral degree, 5 years' experience of teaching post-graduate classes and/or Post-Doctoral Research.

2. Lecturers in Psychology & History

The post of Lecturer in History is temporary in the first instance but likely to continue.

Qualifications

(a) Consistently good academic record, first or high second class Master's Degree in the relevant subject.

(b) Doctoral degree or research work of an equally high standard.

Specialisations

Reader in Psychology

Comparative Psychology/Social Psychology/Experimental Psychology.

Lecturers in Psychology

Biochemical/hormonal basis of memory, Guidance and Counselling/Clinical Psychology/Experimental Psychology.

Lecturer in History

Medieval Indian History.

U.G.C. pay scale for all the posts. Other allowances and benefit of Contributory Provident Fund admissible as per University Rules. Reservation for Ex-Servicemen/B.C./S.C./S.T. candidates as per rules and no application fee from them, Higher start admissible in deserving cases. Knowledge of Hindi essential for all posts.

Applications, alongwith Postal Order for Rs. 10/- favouring Chief Accounts Officer, payable at Rohtak should reach the Registrar by **January 23, 1985** & eligible candidates should appear for interview on **27-1-1985** at **11-00 A.M.** in the Vice-Chancellor's Office. No separate interview letters will be issued.

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University News

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Editor :
M.S. RAMAMURTHY

Open University in Delhi proposed

The Union Education Minister, Shri K.C. Pant, speaking to the press after taking charge of his Ministry disclosed recently that an Open University is proposed to be established in Delhi. While necessary discussions have been initiated however, the views of the Government on this are still to be formulated clearly. The Minister therefore expressed his inability to say at this stage as to when the university would be set up or what its broad features are likely to be.

He further stated that the new education policy being formulated, as already announced by the Prime Minister, Shri Rajiv Gandhi, will not seek to change the current 10+2+3 pattern of education.

Steps for delinking degrees from jobs are also proposed to be taken. Such delinking of degrees from jobs, the Minister said, could not be viewed in isolation but as part of a package. We should give weightage to vocationalisation of school education and the non-formal stream as well. Vocationalisation needed to be linked with local employment opportunities, the Minister added. His Ministry, the Minister said, would study the report of the G. Parthasarathy Committee on delinking degrees from jobs and see how it could be brought about. This report, he said, is expected to be submitted to the Ministry shortly.

Report on Open University in Maharashtra submitted

Dr. K.G. Deshmukh, Vice-Chancellor of Amravati University, who led a 10-member committee constituted by the State Government in July last year to explore the possibilities of establishing an Open University, has submitted its report to the Government. The Committee, it is reported, has strongly expressed in favour of creating such a university at the earliest with headquarters at Bombay or Pune or Nagpur.

The concept of Open Schools is also under the active consideration of the Government of Maharashtra.

Older students do better at UK Open University

The Older Students Research Group conducted a survey of Open University students in UK recently, it is reported. The survey reveals that students over the age of 60 are found to be amongst "the most successful, well organised and worry-free in the university". The poll of 1,042 older students shows that their academic performance compares favourably with under-60 students with the 60-64 age group having the best pass rate in examinations of all Open University students.

The survey also shows that most over-60 students are interested in academically demanding courses.

More than two-thirds of the students hoped that their studies would provide "stimulation and new ideas, a sense of achievement and the pleasure of learning".

The Open University has about 2,800 students aged over 60. This represents about 4.5% of the Open University undergraduate population and about 90% of all older students studying in higher education in the UK. [Courtesy : Times Higher Education Supplement, 11.1.85]

Higher Education and Five Year Plans

Policies, Plans and Perspectives

S. N. Saraf*

Text of the paper presented at the Fifteenth Seminar on Management of Education Systems for University and College Administrators held at the Administrative Staff College of India, Hyderabad in October, 1984.

The first part of the paper was published in the last issue. The Second part appears below.

Increased demand for higher education as a result of the expanding base at the elementary and secondary stages of education has been referred to in the opening sentence of the section on University Education in the Third Plan. While the target of opening of new universities in the Second Plan period was seven, the actual number of additional universities established was thirteen. The number of universities rose from 27 in 1950-51 to 32 in 1955-56 and to 45 in 1968-69. Recognising the inevitability of the setting up of new universities during the Third Plan, it was mentioned that their number may be a dozen or so. Actually the number of Universities in 1965-66 rose to 80 i.e.; 35 additional universities, including deemed Universities, were added during 1961-66. The number of additional colleges (excluding intermediate colleges) established during the Second Plan was 278 (no targets were indicated). As in the case of universities, the Third Plan projected that about 350 to 400 new colleges would be added. However, the number of colleges rose from 1050 in 1960-61 to 1673 in 1965-66 i.e. 623 additional colleges. The rapid expansion in the number of universities and colleges, during the first ten years of planned development of the country, it was bemoaned, had led to a number of major problems. Such problems were reviewed by the University Grants Commission. For the first time, even though a reference was made to the diversion of students for pursuing various forms of vocational education and training, delinking of degree from employment was not mentioned. The Third Plan endorsed the University Grants Commission's plea that if deterioration is to be avoided, increase in number of students had to be accompanied by corresponding expanding of physical and other teaching facilities. However, recognising the fact that, after effecting improvements, the rate of expansion will grow and the problems will assume large dimension it was recommended that suitable criteria for selection had to be adopted in order to admit only those students in formal institutions who show good academic record. To meet rush for admission, for others, proposals for evening colleges, correspondence courses and the award to external degrees require to be considered. The Universities Education Commission had suggested this as early as 1949 even before the beginning of developmental plans but no concrete steps were taken.

As part of the strategy to train scientific personal and to meet the principle of the equity, expansion of science education at the first degree and the post-graduate and research level and development of women's education were referred to in details. It was recognised that, as in the Second Plan, not only higher educational facilities for women be expanded but courses of special interest to women should be improved and extended in order to meet the shortage of woman-power in specialised areas.

The setting up of rural universities was referred to in the First Plan. However, during the Second Plan, 11 rural institutes were established with an enrolment of over 2300 students with the objective of providing higher education, after the secondary stage, to the rural students in their own setting for developing rural leadership and for stimulating active participation of the rural population in welfare and community development programmes. The rural institutes awarded diploma course in rural services, rural civil engineering, agricultural and health services. The rural institutes it was mentioned, were still in an experimental stage and during the third plan it would be necessary to examine the full potentialities of these institutes and their contribution towards meeting the manpower requirements for rural development so as to equip them fully to the developmental needs of rural communities. The Three Year Degree Course was introduced during the Second Plan as a sequel to the introduction of 11 years schooling with three years of higher secondary education in classes IX, X and XI with accent on diversified courses. The Three Year Degree Course was an attempt not only on the structural changes but included such programmes as improvement in the teacher-pupil ratio, introduction of tutorial system, general education courses, improvement of libraries, laboratories and instructional buildings. It also visua-

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**Visiting Consultant, National Institute of Educational Planning and Administration, New Delhi.*

The opinions expressed in this paper are personal views of the author. These do not, in any way, reflect the views and policies of the National Institute of Educational Planning and Administration.

lised improvement in the quality of teachers through periodical conferences, seminars, summer schools, refresher courses, research grants etc. For students, additional amenities in the form of hostels, hobby workshops, non-resident students centres, health centres, counselling and student aid fund were provided under this programme.

The Plan visualised a compact programme for post-graduate studies & research, especially in science through the University Grants Commission in continuation of the schemes already initiated during the Second Plan.

In the first two Plans, Education was treated as a part of the social service. Even though the University Education Commission 1948-49, the Constitution of India, 1950, the Secondary Education Commission, 1952-53 and other high-level Committees and Commissions had highlighted the role which education could play in national development, it was not adequately reflected in the Plans. By 1961, it became abundantly clear, as stated in the Third Plan document, "that education is the most single factor in achieving economic development and technological progress and increasing a social order founded on the values of freedom, social justice and equal opportunity". Significantly the first section of the chapter on Education in the Third Plan, which was published in August 1961, had the sub-heading "Education and National Development". By coincidence Education Commission 1964-66, which was set up in 1964, nearly three years after the publication of the Third Five Year Plan, decided that Education and National Development should be the title of its Report. It was felt that in the past several Commissions and Committees had examined limited sectors and specific aspects of education; what was needed was a synoptic survey and an imaginative look at education considered as a whole and not fragmented into parts and stages. A number of factors like the conflict with China in 1962, population explosion revealed by the Census of 1961, inadequate coverage of the population under literacy and elementary education, need for training scientific and technical personnel in adequate numbers combining economic growth with social justice, indicated that the development of human resources, of which education was an important component, needs to be looked into comprehensively. The Education Commission was set up in 1964 to have a comprehensive review of the entire educational system and advise Government on the national pattern of education and on the general principles and policies for the development of education at all stages and in all its aspects.

The Education Commission dealt comprehensively with the problems of higher education in terms of objectives and improvement, enrolments and programmes and governance and made detailed recommendations. Among the qualitative improvements, one of the important recommendations of the Education Commission was the selective improvement, in general, and the setting up of major universities, in particular, which would draw their students and faculty from all parts of the country so that the highest possible standards are maintained. However, it was recommended that adequate arrangements should be made, right from the start, to ensure that excellence generated in these institutions is extended to the university system as a whole. The Commission recommended the adoption of more rigorous selective admission at the undergraduate stage, primarily to cut down the growing numbers of the educated unemployed. It was also of the view that admissions at this stage should ordinarily be related to the facilities available. It attached great importance to the post-graduate stage for the maintenance of standards, not only in education but in all walks of life. The Commission, therefore, suggested a large expansion at this stage side by side with an intensive effort at improving standards.

During the Plan Pause 1966-69, the recommendations of the Education Commission were processed at different levels and the Government of India issued National Policy on Education in 1968. The Policy enunciated development of part-time education and correspondence courses on a big scale in order to provide opportunities to the large number of people who have the desire to educate themselves further but cannot do so on a full-time basis. In regard to full-time facilities at the university stage, it recommended its expansion to be linked with the availability of such facilities as laboratory, library and teaching staff. The only embargo on the establishment of new universities was the provision of adequate funds and need for ensuring proper standards. The recommendations regarding selective admission were not accepted. Inspite of Education Commission's well-drilled arguments in favour of setting up of major universities it was not accepted. However, the Policy reiterated the need for the strengthening of Centres of Advanced Study but recommended the establishment of a small number of 'clusters of centres' aiming at the highest possible standards in research and training in lieu of major universities. No effective steps were, however, taken to implement the proposal. Regarding institutions of research, it was recommended that these should function within the fold of universities or in intimate association with them.

One of the important recommendations of the Education Commission was that, at the university stage, the remuneration of teachers should be broadly comparable with the senior services of Government. This has been implemented.

The Fourth Plan formulated after the National Policy on Education 1968 was available, accepted the hard reality of the inevitable expansion of higher education. Enrolment increased by 0.2 million during each of the First and Second Plans. Without laying any targets, the additional enrolment during the Third Plan was 0.5 million and estimates for the Fourth Plan was about 1 million. Realising the extraordinary strain it would cause on formal and full-time institutions, definite target of 0.15 million enrolment was set for correspondence courses, evening colleges, part-time classes etc. As against 350 to 400 colleges expected to be added during the period 1961-66, actually 1030 colleges were established. Similarly, during the same period, the number of universities increased by 18 as against 12 mentioned in the Third Plan. It was also emphasised that in providing for the additional enrolment, emphasis will be on rational location of institutions and on optimum institutional size. It was stated that correspondence programme will not be confined to humanities only but extended to other disciplines as well.

A strong plea for expansion of enrolment in science courses was made, for the first time, in the Fourth Plan. It was strongly recommended that the percentage of enrolment in science courses (including the intermediate classes of U.P.) to total enrolment, which had increased from 25.7 per cent in 1960-61 to 41.1 per cent in 1965-66, but had dipped to 40.2 per cent in 1968-69, should increase to 44.7 per cent in 1973-74. Expansion alone was not emphasised, several measures to improve standards through larger provision of scientific equipment, preparation and publication of standard textbooks as well as augmenting the number of well-qualified science teachers was stressed.

The qualitative improvement at the post-graduate level was the main pre-occupation of the Fourth Plan. Apart from increasing the facilities of post-graduate education and research, it was recommended that some promising university departments, in order to promote excellence, should be encouraged to grow as Centres of Advanced Studies. In order to develop inter-disciplinary research, clusters of Centres of Advanced Studies would be set up in related subjects. With the setting up of the Indian Council of Social Science Research, as a plan projects, research in social sciences would be promoted.

A large number of scholarship schemes were initiated during the first Three Plans to promote talent and equalise educational opportunities. The Fourth Plan referred to considerable step up in their numbers and the University Grants Commission's continued support to provide fellowships for post-graduate education and research.

The number of universities increased from 27 in 1950-51 to 73 in 1968-69. Their rapid establishment, the Fourth Plan admitted, had led to a number of problems. Their establishment required regulation on the basis of needs and availability of resources. The Fourth Plan mentioned that proposals to set up new universities will be carefully examined by the University Grants Commission and Ministry of Education.

The Fourth Plan did not refer to the Three Year Degree Course programme. It was mentioned that the rural institutes whose number in 1968-69 was 14 will be more effectively linked with the needs of rural areas.

In a small para of five sentences, the Fifth Plan (1974-79) referred to major emphasis being laid on consolidation and improvement of university education but conceded that provision will be made for extending educational facilities to weaker sections of society and in the backward areas. Facilities through evening colleges, correspondence courses and private study would be expanded. Regarding post-graduate education, the Fifth Plan observed that the policy would be to continue to strengthen it through the development of Centres of Advanced Study, science service centres, common computer facilities and regional instrumentation workshops. Programmes of faculty development, initiated earlier, in the form of summer institutes, seminars and re-orientation courses, will be stepped up.

The Draft Sixth Five Year Plan (1978-83) published on April 1978, stated that there was both unplanned and rapid expansion of higher education in the first four plans and that during the Fifth Plan, due to deliberate policy to regulate enrolment and partly because of the adoption of the new pattern of higher secondary education, the rate of growth of general higher education declined to some extent. It pleaded strongly for charging development fees as even more relevant and necessary for higher education. Such fees need to be charged at rates which bear a reasonable relationship with the cost of providing education. This would act as a further curb on expansion with the proviso that the access of the weaker sections of the community to higher education, which is probably their almost exclusive channel to vertical mobility is increased. Simultaneously it was mentioned that access to higher education will be linked to talent and aptitude and that admission to full-time institutions at the first degree and post-graduate levels will be selective, based on merit with reservation of an adequate number of seats for the weaker sections. The restructuring of undergraduate and post-graduate courses to make them more meaningful and relevant to the students and society alike was included as one of the important strategies.

In the Sixth Plan (1980-85), higher education comes in for a comprehensive treatment in regard to problems, prospects and programmes. While it refers to the creation of extensive and widespread facilities in terms of number of institutions set up and student enrolment, a strong plea has been made for coordination and maximising the utilisation of these facilities. This kind of approach would reduce additional financial inputs in order to make the non-viable institutions with low enrolment, inadequate provision of facilities, critically viable. Due to rapid expansion, without regard to the location and viability of institutions, the proliferation of institutions offering only general academic courses has assumed serious dimensions. This would need to be tackled with determination. Such institutions do accentuate the problems of unemployment among the graduates and low use of existing economic resources for educational development.

The Sixth Plan, like the Fifth Plan, makes a plea for the expansion of higher education for the first generation learners and particularly for the socially disadvantaged sections for whom higher education provides a transition, opportunity and challenge in terms of life perspectives and socio-economic aspirations of the community.

The redesigning of under-graduate courses and their restructuring to improve employment orientation requires extension. In the area of post-graduate education and research, major emphasis would be on promoting research and development capability of the university system and on inter-disciplinary studies, particularly in new emerging areas of knowledge relevant to national development objectives. The need for coordinating research in the University system with the national science and technology efforts was stressed so that such areas are identified to which research funds would be channelised and close collaboration realised on a structural basis among universities, national laboratories and other research organisations.

Another significant recommendation made is that institutions of higher learning would be encouraged and enabled to involve themselves with the developmental activities in the community and providing requisite support through extension services of students and faculties. What is important to note is that the Sixth Plan stated that such extension work would be considered as part of the normal academic work of the student and teachers and not as social service. This is very significant and is mentioned after many Committees and Groups had pleaded for it.

Another important area referred to is the importance of forging beneficial linkages among education, employment and economic development. It endorses the idea that educational programmes should be related to manpower profiles, existing and needed, in the developmental areas/sectors and provide for adequate levels and scope of pre-employment knowledge and skills, as also for continuing education for those who are already employed. Comprehensive recommendations have been made for this purpose which envisage, among others, a variety of programmes at different levels of education which would encourage students directly in matter of area and community development, restructuring of under-graduate courses, setting up of institutional framework within university system to plan relevant activity and to monitor their coordination and joint action between the educational system and the development departments and sectors and forging of effective linkages at the state level, in addition to the academic and sub-regional levels to ensure coordination among educational planning and executive efforts. A number of programmes like work experience, vocationalisation, apprenticeship/employment, provision of minimum needs programmes have been mentioned which need to be linked up with developmental efforts at the district and sub-regional levels and coordination with research and development.

This synoptic presentation of policies and programmes incorporated in the first Six Plans indicates conclusively that several reforms and innovations have been repeated and re-emphasised over time in one form or the other. Sometimes one wonders whether, inspite of massive investments made over the years, there has been any major qualitative change in the state of general university education since the attainment of Independence in 1947.

Despite the fact that the proportion of Education outlay to the total Plan outlay showed a decreasing trend, the allocation for university education (general) in the first Five Year Plans, rose as percentage to the total outlays for education. This is shown in Table 1 (Given on next page).

It is only during the Fifth Plan period that the realisation dawned that elementary and adult education sectors required somewhat higher priority. This was in pursuance of the overall policy of redistributive justice to alleviate poverty that elementary and adult education were included as integral components of Minimum Needs Programme. This sizeable shift in the reallocation of priorities and resources, in terms of provision of outlays for different sectors of education began with the formulation of Draft Sixth Five Year Plan, 1978-83 which could not be finalised due to change in Government in 1980. However, the Sixth Plan 1980-85, allocated 41 per cent outlay to elementary and adult education forming part of Revised 20-Point Programme, as against 33 per cent during the Fifth Plan. Though the percentage of allocations for University Education in the Sixth Plan was less when compared to Fourth and Fifth Plans but the outlay, in terms of absolute figures, was equal to the expenditure/outlay during the previous two Plans put together.

Another area, besides University Education, closely coming within the purview of higher education is Technical Education for which provision is included under Education. Outlays for Medical and Agriculture Education are included in the respective sectors of development. As in the case of University Education, allocation for technical education increased from a mere 6 per cent in the First Plan to 11 per cent in the Fourth Plan. This was largely the result of unprecedented expansion which took place during this period. Beginning effectively from Fourth Plan, deliberate attempts were made to develop technical education facilities strictly in relation to foreseen technical personnel requirements and there is virtual ceiling on admission capacity in the diploma and degree-level courses which has not yet been relaxed.

Taking both the sub-sectors of University and Technical Education together, the total expenditure incurred and outlay provided in the first six Five

Year Plans would be over Rs. 1914 crores or about 32 per cent of the total expenditure/outlay on education. This is exclusive of the provision for Medical and Agricultural Education shown in the respective sectors of development. It indicates the priority given to Higher Education in developmental plans. It is rather difficult to disagree with the following observations made by late Prof. J.P. Naik about Higher Education in the post-Independence period.

"The Post-Independence period may be described literally as the "era of higher education" in Indian educational history.......The University Education Commission was the first to be appointed by the Government of Free India; and throughout the past thirty years, higher education has received the highest priority, the best attention and proportionately large allocation of funds. It is also the one sector of education which has expanded most".*

[To be concluded]

Table No. 1

Sector-wise Outlay/Expenditure in the Five Year Plans-Education and Total Plan

(Rs. in Crores)

S. No.	Sector	First Plan 1951-56 Expenditure	Second Plan 1956-61 Expenditure	Third Plan 1961-66 Expenditure	Plan Inter-regnum 1966-69	Fourth Plan 1967-74 Expenditure	Fifth Plan 1974-79 Outlay	Draft Sixth Plan 1978-83 (Revised) Outlay	Sixth Plan 1980-85 Outlay
1	2	3	4	5	6	7	8	9	10
1.	Elementary Education	85	95	201	75	239	410	900	905
		(56)	(35)	(34)	(23)	(30)	(32)	(45)	(36)
2.	Secondary Education	20	51	103	52	140	250	368	420
		(13)	(19)	(18)	(16)	(18)	(19)	(14)	(17)
3.	Univ. Education	14	48	87	77	195	292	265	486
		(9)	(18)	(15)	(24)	(25)	(23)	(13)	(19)
4.	Adult Education	5	4	2	3	4.5	18	200	128
		(3)	(1)	(Neg.)	(1)	(1)	(1.4)	(10)	(5)
5.	Other Programmes	9	23	64	30	89.5	122	118	223
		(6)	(8)	(11)	(10)	(11)	(9.5)	(6)	(9)
6.	Total General Edu.	133	221	457	237	668	1092	1751	2162
		(87)	(81)	(78)	(74)	(85)	(85)	(88)	(86)
7.	Art & Culture	—	3	7	4	12	37	65	84
			(1)	(1)	(1)	(2)	(2.9)	(3)	(3)
8.	Technical Education	20	49	125	81	106	156	170	278
		(13)	(18)	(21)	(25)	(13)	(12.1)	(9)	(11)
9.	TOTAL EDN.	153	273	589	322	786	1285	1986	2574
		(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)
10.	TOTAL PLAN	1946	4680	8572		15742	39322	71000	97500
11.	EDN as % of Total Plan	7.6	5.8	6.8		5.0	3.2	2.8	2.6

(Figures within paranthesis indicate percentages)

Convocation

Dr. Qasim Addresses Convocation of University of Poona

Excerpts from the convocation address delivered by Dr S.Z. Qasim, Secretary, Department of Ocean Development, Govt. of India, at the University of Poona on December 7, 1984

"...The University of Poona is young in comparison to some of the other universities in the country. It is heartening to note that though established in 1948, it has already made its mark in all the three areas of its activities i.e. teaching, research and extension. The University is striving its best to achieve higher standards and excellence in the fields of teaching and research. It is said that the battle of Waterloo was fought in the playing grounds of the two well known English schools Eton and Harrow. In fact, the education that a man receives in the early stages of his career in the school and university, mould his life to enable him to face the challenges of life later. I am sure that the University of Poona is fully aware of its responsibilities and is discharging them effectively to give to the country a team of motivated youth. Gone are the days when formal education received in the universities used to be considered as a passport to a promising career. The importance of informal education, open university system, correspondence courses etc., is being increasingly recognised. The University of Poona is very active in the field of education through its extramural centres, continuing education, adult education programmes, National Service Scheme, etc.

Another very important development of recent origin is the proposal to establish Education Media Research Centre (EMRC) at this University. Such a Centre is one of the four to be established in the country. The EMRC with its T.V. studio already established in the university is expected to prepare a series of quality educational programmes to be televised to various colleges and private students through INSAT-1B. I must, therefore, extend my admiration and congratulate the University for introducing this system which will serve as a major landmark in the educational system of the country.

Immediately after Independence, the most important task before the country was its socio-economic development based on modern scientific and technological ideas. India was fortunate in having vast natural resources, but how to make use of these resources was the problem. Thanks to the leadership and the perspective vision of Pandit Jawaharlal Nehru that it has received the concept of modernity that was essential for India's progress and that the scientific temper was considered the best means to achieve it. It soon came to be realised that to utilize the vast natural resources all round, the nation had to make investment first in improving the quality of its most valuable resource and that is the human resource. This realisation soon became the source of democratisation of education which involved expansion of educational opportunities at all levels. Vigorous efforts were made to set up institutions of higher learning in humanities, sociology and natural sciences particularly in the fields of engineering, medicine and other technical disciplines.

Pandit Jawaharlal Nehru's faith in the excellence of Indian mind and intellect and its capacity to absorb the fruits of modern science and technology stands fully proved by the phenomenal growth of our science and the very large turn-out of our scientists, engineers and other technical and professional men and women. India is now ranked third in the world in terms of scientific and technical manpower, next only to that of USA and USSR. With such a reservoir of talents equipped to use the vast mineral, agricultural and industrial resources available in the country, it is no wonder that India has made significant progress within a period of three decades. Since independence, phenomenal progress has been achieved in the field of science and technology and more so during the last two decades.

The credit to what we have achieved in the field of science and technology during the last 18 years goes to our late Prime Minister Shrimati Indira Gandhi under whose leadership India has made the most significant progress. Thus, foodgrain production, which was 52 million tonnes in 1952-53 has reached a figure of over 150 million tonnes in 1983-84. The death-rate per thousand has been brought down to less than 12 as against 31 in 1936. The birth rate per thousand has been reduced from 42 in 1956 to 34 in 1981. The expectancy of life has gone up from 32 years in 1947 to 54.5 in 1980. Today, there are 320 science and technology institutions, of which 240 are major. There are more than 900 in-house R&D laboratories in public and private sectors. The enrolment for degrees in engineering and technology has moved up from 3000 in 1947 to 33,000 in 1981. We have now 138 universities 5 IIT, 111 Medical Colleges and approximately 5000 colleges of all types—agricultural, veterinary, arts, science commerce, engineering etc. India ranks eight amongst the top industrialised countries in the world. The country has undoubtedly reached a take-off stage for further advancement. India has been able to put several satellites in the space including a manned flight. The Pokhran Test has heralded a new era of far-reaching economic possibilities for India. It will not be absolutely true to the point to say that India is a developing country at least in the field of science and technology. India is now as much developed in this field as many of the developed countries.

As a natural corollary to democratisation of education and urge of the youth for higher education, there have been new and emerging areas in the field of science and technology. Mention may be made in this connection regarding the development of ocean science in the last decade or so. Although man is exploring the mysteries of space and sending rockets beyond the solar system, little is known to him of the oceans which constitute more than two-thirds of his planet. Primitive man came to know about the sea some 50,000 years ago, but the realisation of an intimate relationship which exists between man and the sea has come to be known only in recent years. With growing industrialisation and increasing human habitation, the availability of land resources is becoming shorter and shorter. In many areas, man has come to a stage when he has started wondering what would be the resources to fall back on after the turn of the century. Man is perforce looking towards the oceans as his last frontier of resources.

Once again I would like to mention that it was Shrimati Indira Gandhi who created a new Department of Ocean Development and took a personal interest in its programmes such as the Antarctica Research and Deep Sea Mining. This Department is contributing in whatever manner it can in the ocean sector. We have already sent three expeditions to Antarctica and the fourth one is underway. A permanently manned station has been established in Antarctica and another base, as an extension of the earlier, is going to be built soon. Despite the fact that Antarctica is the coldest, stormiest and the most inhospitable region of the world, the Indian scientists have shown indomitable courage and determination in undertaking journeys to Antarctica and running the base camp throughout the year. Why? Because, the Antarctica region offers great potentialities—its untapped resources, its virgin soil, its mid night sun—all make it an irresistible lure to man. I am glad to tell you that India is working on a programme in building the necessary infrastructure to study and harness some of the resources of the Antarctic waters such as the Shrimp-like krill.

India has also been recognised as a Pioneer Investor for deep sea mining of polymetallic nodules which constitute a very large source of valuable metals hitherto untapped. There are three other countries along with India, which have been recognised as pioneer investors, namely France Japan and USSR. This status has been given to India in recognition of the significant work carried out by our scientists in the survey and exploration of the deep sea and in identifying the best areas of nodule deposit in the Indian Ocean.

Researches are also going on in India for tapping the non-conventional sources energy from the sea such as energy from the waves, tides and from the thermal energy differences which exist in the water column of the sea (OTEC). India is making excellent progress in this high technology areas and the day is not far off when offshore and deep sea mining will become commercial realities, enhancing India's economy to a high level. Imagine the situation when India will be producing power from the sea on a massive scale which is renewable and pollution-free.

We must remember that the purpose of University education is not only to develop knowledge of the individuals but also to train and educate them in becoming useful citizens and to instil in them a profound sense of duty. The privileged educated class, and I quote, "should be taught to feel that the mankind depends upon them and that they owe benevolent service especially to less fortunate classes beneath them. Their manners will be easy and pleasant and their sense of humour unfailing."

Swamy Ranganathananda, the roving cultural ambassador of India says:

"We are now experimenting on human welfare development in our country. We had never done it before on the colossal scale that we are doing today. We had the necessary philosophy and ideas; but the implementation was arrested in later centuries. Therefore, the stress today should be on practical implementation, faster and still faster, and watching a new India, healthy and strong, rising on the horizon".

In the words of Robert Frost, "You've got to love what's lovable and hate what is hateable. It takes brains to see the difference". The purpose of the university education should be to build such brains.

The present system of education prevalent in this country emphasises the acquisition of knowledge. To respond effectively to the changing social environment, it is necessary that the emphasis in education is shifted to the development of self-awareness, and acquisition of skills which would enable the students to participate in the task of national development. I am glad to note that with this in view, a scheme of restructuring the courses of studies has been initiated in this University and I hope that the restructured courses should offer facilities for the total development of the type of citizens we need in our country..." □

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Annamalai hosts 45th Session of Indian History Congress

The 45th Annual Session of the Indian History Congress was held at Annamalainagar from 27th to 29th Dec. '84 under the auspices of the Department of History, Annamalai University. About 600 delegates from all over the country and 20 scholars from U.S.A., England, the Netherlands, Australia, Bangla Desh, China and Sri Lanka attended the conference.

Inaugurating the Congress, Thiru R. Venkataraman, Vice-President of India, stated that during the last 3 decades or so, historical research in India had undergone a quantitative and more so a qualitative change both in terms of conceptual framework and techniques of analysis. Noting that there was a broad agreement that history was a great deal more than the study of wars between states, dynastic rule, court annals, military techniques and diplomacy, he said that forces and the legacy of the past that vitally affected the present needed to be discerned and that one must also see ahead and make valid forecasts about the shape of things to come.

"Time is one vast continuum and humanity has still much headway to make. If we see the rise and fall of Kingdoms in Indian History, we find that those that got bogged down in narrow politics and blind parochialism and believed in mutual extermination have only wiped themselves out. It is the neglect of their spirit that finally destroyed them. The Indian sages and thinkers never built narrow domestic walls but always talked in terms of *Sarvalokahita*. Though many wars have been fought from time to time and many empires grew and perished, the real character of India has remained more or less intact," he said.

"There is an essential and fundamental unity in History. Nothing can be more absurd than dividing Indian History as Hindu Period, Muhammadan Period and British Period. Communal divisions should be discarded. Although there may be a temporary division of history for the sake of specialisation, in the world of thought, history ought to be treated as having a continuous sequence in the world of action. Indian History exhibits continuous reciprocity of feelings and solidarity of sentiment between the cultured classes and the masses, and Indian Historical Literature gives us a more complete embodiment of the national spirit than can be shown by any other nation in Asia," he added.

In his Presidential Address (read out in his absence) His Ex-Thiru S.L. Khurana, Governor of Tamil Nadu, remarked:

"Until recently, the emphasis in historiography was on heroic figures. Carlyle's prescription "The history of the world is but the biography of great men" governed both the writing and studying of history. The emphasis has shifted from the pinnacles (the *shikharam*) to the flanks and the supporting bases of historical events, in other words, to the society and to the people of each historical epoch, seeking out man's progress through the tribulations imposed on him by time".

Narrations of historical events that are either too rigidly periodized or too local cannot do justice to man's continuous movement towards progress, the phenomenon that distinguishes him from other creatures. His searches, which have drawn him over continents and hills and across the oceans, form a continuum that cannot be thus inhibited, he said.

Noting the perceptive observations of Pandit Jawaharlal Nehru on Pallava Chola and Pandya dynasties, he said "the Cauvery and Vellaru basins came to be known for well-established guilds of stone-cutters, carvers and architects that could cope with requirements of structural work as a matter of routine and were fully conversant with the nearest sources of rock for their enterprise. And the illustrious chieftains of the time recognized and encouraged this activity."

Declaring open an Exhibition organised as part of the History Congress Thiru C. Aranganayakam, Minister for Education, Government of Tamil Nadu, stated: "India, it should be remembered, cannot have continued a cultured existence for thousands of years, if it had no-possessed something vital, somet thing enduring. It was Prof Childe, who, commenting on the Indus culture, wrote: "The Indus civilization represents a very perfect adjustment of human life to a specific environment that can only have resulted from years of patient effort. And it has endured, it is already specifically Indian and forms the basis of modern Indian culture." It is astonishing that a culture or civilization like ours should have preserved itself for five or six thousand years, not in a static and dull sense but in a remarkably dynamic sense. Despite repeated invasions by people from outside, India's cultural basis has remained more or less intact, it has endured. This is a phenomenon without parallel."

"It is a thousand pities that while writing the history of the ndian people, the south gets a step-motherly treatment at the hands of even our Indian historians. The rich contributions that the Dravidian elements of our composite culture have made do not appear to engage their serious attention," he observed.

Welcoming the delegates Prof. S.V. Chittibabu, Vice-Chancellor, Annamalai University, said:

"Belonging, as he does, to a tribe of scholars more sinned against than sinning, the historian has been castigated, sometimes mercilessly, as a distiller of rumour and gossip, injecting his personal likes and dislikes into his narration of past events and indulging in garbled versions of even an honourable tale.

To Schlegel "a historian is but a prophet in reverse." "God" quips a satirist, "cannot alter the past and that is why He is obliged to connive at the existence of historians." Despite these jibes and caricatures, historians, as votaries of Clio, have the moral obligation to be impartial, impersonal and objective.

Continuing, he said "in the post-Independence period we observe a change for the better, for our historians have come to view history as a chronicle of social growth and development and not primarily a political narrative. It is a welcome sign to note that challenging interpretations of political events are being essayed and political developments being analysed in the context of social, economic and cultural histories."

"Before concluding I have one appeal to make to you, as historians. India is today confronted with hydra-headed problems which threaten to tear the tapestry of national unity and solidarity to shreds. But fortunately the inherent vitality and adroitness of the Indian spirit remains unimpaired. This is because the composite culture of ours is a rare blend of many forces and factors fostering a synthetic attitude to life. Decontaminating historiography of the virus of chauvinism, regionalism, linguism, sentimentalism and communalism, historians would do well to act their significant role as integrators, bridge-builders, harmonisers and humanisers."

Dr. J.S. Grewal, Vice-Chancellor, Guru Nanak Dev University, Amritsar, in his General Presidential Address stated:

"To entertain the idea of social change in medieval India is to discard the myth of the unchanging east. There is ample justification for this. Important changes took place during the medieval period in the economic, political and cultural spheres. These three dimensions of social mobility (economic, political and cultural or ideological) are mutually dependent but never wholly reducible to one another. In approaching social change in medieval India it may be helpful to remember this dictum; 'no production, no history' can provoke the report "no culture, no production."

"Social change in medieval India is a vast and complex subject. We have not been able to to go into all its ramifications. It appears, however, that polity and economy were effective in creating horizontal stratification, while ideologies were responsible for vertical cleavages. The horizontal stratification could provide the framework for some upward mobility through the medium of ideologies, while vertical divisions themselves became subject to socio-economic pressures leading to horizontal stratification within the vertical divisions."

After the inaugural session, in the afternoon a seminar was conducted to celebrate the 1000th year of the Coronation of Raja Raja Chola I. ☐

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Seminar on Inter-Religious Approach to Peace Building at GRI

Dr John B. Taylor, Secretary-General, World Conference on Religion and Peace/International inaugurated a day long Seminar on Inter-Religious Approach to Peace Building organised by the Gandhigram Rural Institute (Deemed University) at Gandhigram on 5th December 1984 with Dr M. Aram, Vice-Chancellor of the University in the Chair.

Outlining the significant role played by WCRP in Peace-Building activities, Dr Taylor called upon all religions to work together so as to promote and foster peace in the world community. Twentieth century is a century of conflicts. Peace occupies a pivotal role in this strife-tern society. In order to achieve a peaceful society, Dr Taylor felt that there must be humane relationship among the brethren and a commitment on the part of the people. Inter-religious cooperation will go a long way to promote and usher in a peaceful society. He emphasised local initiatives besides national and international efforts to promote peace.

Dr M. Aram, Vice-Chancellor, in his presidential address, pointed out that there was no fundamental antagonism between religion and science. The motive force for science arrives from the realm of religion. He laid emphasis on the importance of a holistic concept of peace which includes disarmament, human rights, peace education, reconciliation and integrated development. Dwelling on the concept of peace education, he explained, it should not only mean theoretical study, formal and non-formal, but should include social action about problems of peace and war. The Shanti Sena programme of Gandhigram is field-oriented with an emphasis on action. Such Shanti-Sena programme is a powerful means of peace education.

At the Seminar, ten papers were presented on various topics connected with peace building and inter-religious cooperation, such as Gandhian Approach to Religion and Peace, Vinobaji's Concept of Religion and Peace, Christian Approach to Peace Building, Islam and Peace Building, Religion and Social Reform etc. in two sessions by the faculty members and religious leaders. Dr M. Aram, Vice-Chancellor presided over the first session while the second session was chaired by Dr S. Jeyaprakasam of Madurai Kamaraj University. Besides M.Phil. and Post-graduate students of the Rural University, M.Sc. Peace-Making students of Madurai Kamaraj University and students from Gandhigram institutions participated.

Indian Council of Chemists meets at Gorakhpur Varsity

The Governor of Bihar, Dr. A.R. Kidwai, exhorted scientific organisations to cooperate with each other in providing such facilities to the researchers and other scholars which could not be provided by individual institutions and departments.

Inaugurating the 4th annual session of the Indian Council of Chemists on December 30, 1984 in the auditorium of the Gorakhpur University, Dr. Kidwai said that there was ample scope for these professional bodies to provide collective facilities in instrumentation, bibliography, scientific journals and employment.

Emphasising the need for keeping the syllabi in various disciplines up-to-date and achieving a high national standard, the Bihar Governor asserted that this job could be performed in a better way by the scientific organisations rather than by the University Grants Commission, which took a long time in finalising the syllabi with the result that they became out dated by the time they were finalised.

Dr. Kidwai exhorted the Indian Council of Chemists to organise refresher courses for the chemists engaged in industries, without which they were bound to lag behind as rapid developments were taking place in various disciplines of science. In this connection, he also emphasised the need for organising lectures and seminars at different levels.

Highlighting the role of multidisciplinary researches in ushering in a new era, Dr. Kidwai said genetic engineering was now getting prominence in which advantage was being taken of the superior forces of nature to procure material which was difficult to get otherwise.

Dr. Kidwai, himself a reputed chemist, talked of exciting areas like controlled tissue culture.

In his presidential remarks Prof. W.U. Malik, President of the Indian Council of Chemists said that critical self-appraisal would revael that the performance of our scientists was no where near that of the countries of the West or Japan or even of some developing countries.

Undoubtedly, he said some of our universities had produced great scientists and educationists who had risen to positions of eminence but such cases were few and far between.

AMU scheme for artisans

An ambitious plan for the uplift of Muslim artisans which combines training, guidance and financial assistance for the economic development of the weaker sections of the minority community in Uttar Pradesh has been launched by the Aligarh Muslim University.

The polytechnic at the University would build and manage the training-cum-extension centre which will impart training to artisans and provide facilities for the development of tools, equipments and common facility services.

Another highlight of the scheme is the distribution of "easy loans" to the thousands of artisans in the State on nominal interest and without guarantee. The State Government is collaborating with the university in the programme. It is reported that as many as 238 Muslim artisans have already received loans totalling Rs. 1.15 millions under the scheme.

Indira Gandhi Institute of Antartica Research

Inaugurating the All India Literary Festival — Meezan '85 at Aligarh Muslim University, recently, eminent Oceanologist, Dr. S. Zahoor Qasim, Secretary of the Oceanography Department, Govt. Of India, announced the establishment of an "Indira Gandhi Institute of Antartica Research" for promoting researches in the fields of Science and Technology by the Central Government at New Delhi.

Recalling his days in AMU, Dr. Qasim said that this institution was a prestigious seat of learning. He called the students to work for a corporate society.

A three-day festival was organised by the AMU Literary Club which included English, Hindi and Urdu debates, quiz, literary competition activities and other cultural programmes.

New Electronics Department at AMU

The Girls' Polytechnic of the Aligarh Muslim University will soon have a Department of Electronics, it is reported. This, it is stated, would be the first complex of its kind for girls in this country.

Research through correspondence

Punjabi University, Patiala, is reported to have decided to launch, on an experimental basis, M.Phil courses in Punjabi and English through correspondence study.

Andhra University to set up Yoga Institute

The Vice-Chancellor of Andhra University, Prof. K. Ramakrishna Rao, is reported to have disclosed that the university has planned to establish an Institute for Yoga studies. The Institute is proposed to be developed as a leading centre in the country as also an international centre to attract eminent people from outside the country.

CALENDAR OF EVENTS

Proposed Dates of the Event	Title	Objective	Name of the Organising Department	Name of the Organising Secretary /Officer to be contacted
January 24-26, 1985	National Symposium on Comparative Endocrinology of Invertebrates	To evaluate the existing scientific knowledge in the field of Comparative Endocrinology of Invertebrates and to identify the needs of research and development in this field.	Department of Zoology, Marathwada University, Aurangabad.	Prof. B. Nagabhushanam, Convener.
January 28-31, 1985	XXX All India Library Conference	Collection development in libraries and national policy for library and information service.	Department of Library Science, University of Rajasthan, Jaipur.	Shri C.D. Sharma, Organising Secretary.
January 28-1st February, 1985	UGC National Seminar on Futuristic Approach to Teacher Education	—	SNDT College of Education for Women, Pune.	Dr. (Miss) Vinaybala Mehta, Director.
February 3-4, 1985	Gujarat Economic Conference	Academic discussion	Department of Economics, Sardar Patel University, Vallabh Vidyanagar	Head of the Department of Economics
November 28-29, 1985	International Conference on New Technologies in Higher Education	To assess the possibilities of the now available new technologies in the background of the broad social and cultural context and the state and trends of Higher Education in India and other developing countries.	Association of Indian Universities, IIT/Delhi, JNU, Jamia Millia and University of Delhi.	Prof. Tapas Majumdar (JNU), Prof. S. Shukla (Jamia Millia), Prof. L.R Shah (JNU)

Nagarjuna University jurisdiction extended

The jurisdiction of Nagarjuna University has been extended to Krishna, Prakasam and Guntur Districts. The total number of colleges affiliated to Nagarjuna University will now be 96. An Ordinance to extending the jurisdiction of Nagarjuna University has been issued, it is reported.

It is further reported that Colleges in Baputla, Repalle, Narasaraopet, Nagaram, Macherla, Sattenapalli, etc. will be affiliated to Andhra University whose jurisdiction was hitherto limited to Krishna, West Godavari, East Godavari, Vizianagaram, Vizag and Srikakulam Districts.

Gauhati Varsity's summer institute on the teaching of Assamese

A UGC sponsored Summer Institute on 'The Teaching of Assamese at Advanced Level' was held from 5 Oct., 1984 to 25 Oct., 1984 in the department of Assamese, Gauhati University under the directorship of Dr. S. Bharali. The Institute was inaugurated by Dr. Jamini Mohan Choudhury, Vice-Chancellor, Gauhati University on 5 Oct. Forty five teachers having honours teaching experience in colleges of Gauhati and Dibrugarh Universities participated.

The Institute, the first of its kind in Assam was organized with the aim of helping the college teachers in teaching the newly introduced three-year degree course. The idea was to equip them with a thorough grounding in the Assamese language and an advanced training in the appreciation of aspects of modern Assamese literature. Accordingly, teaching was given in lecture, discussion and demonstration classes by persons having specialized knowledge in the subjects and with special emphasis on the texts prescribed for the three-year degree course.

Dr. Gore on police-public relations

Delivering the Valedictory address at the first all-India symposium on "Police-public Relations" organised at Bombay last week, Dr. M.S. Gore, Vice Chancellor of Bombay University and President, Association of Indian Universities felt that while improved police training was a necessity it was not a sufficient condition for better performance.

He urged police officers to resist orders from the Government and politicians that were not in conformity with law. He said police officers should be impartial in dealing with political and industrial agitations to help improve the sagging image and restore its credibility. Political interference in the day-to-day police administration was responsible for the low morale of the police force, he said.

Dr. Gore had served as a member of the National Police Commission.

Sports News

North Zone Inter-University Badminton Tournament at GKVV

Gurukula Kangri organised the North Zone Inter-University Tournament from December 30, 1984 to January 8, 1985. As many as twentynine teams participated in the Men's Section and twentythree teams in Women's Section. Guru Nanak Dev University, Amritsar was the winner in Men Section and Allahabad University got second position. Delhi University was the winner in the Women Section and the Allahabad University was again the runners up.

Delhi University wins North Zone Inter-University Cricket

Delhi University won the North-Zone Inter-University Cricket Championship for the third year in running by virtue of their five run first innings lead over runners up Panjab University.

The highlight of the match was a breezy 200 run eighth-wicket partnership between Sanjeev Vinayak and Shirish Shrivastav of Delhi University. Their partnership lasted 215 minutes. Vinayak played a gallant knock of 128 runs made in 228 minutes which included 13 fours and three sixes. Shrivastav was at the crease for 213 minutes scoring 174 runs including seven boundaries.

The tie was decided as a result of first innings lead because both the innings could not be completed.

Detailed score :

Delhi University — 136 runs and 407 runs

Panjab University — 131 runs.

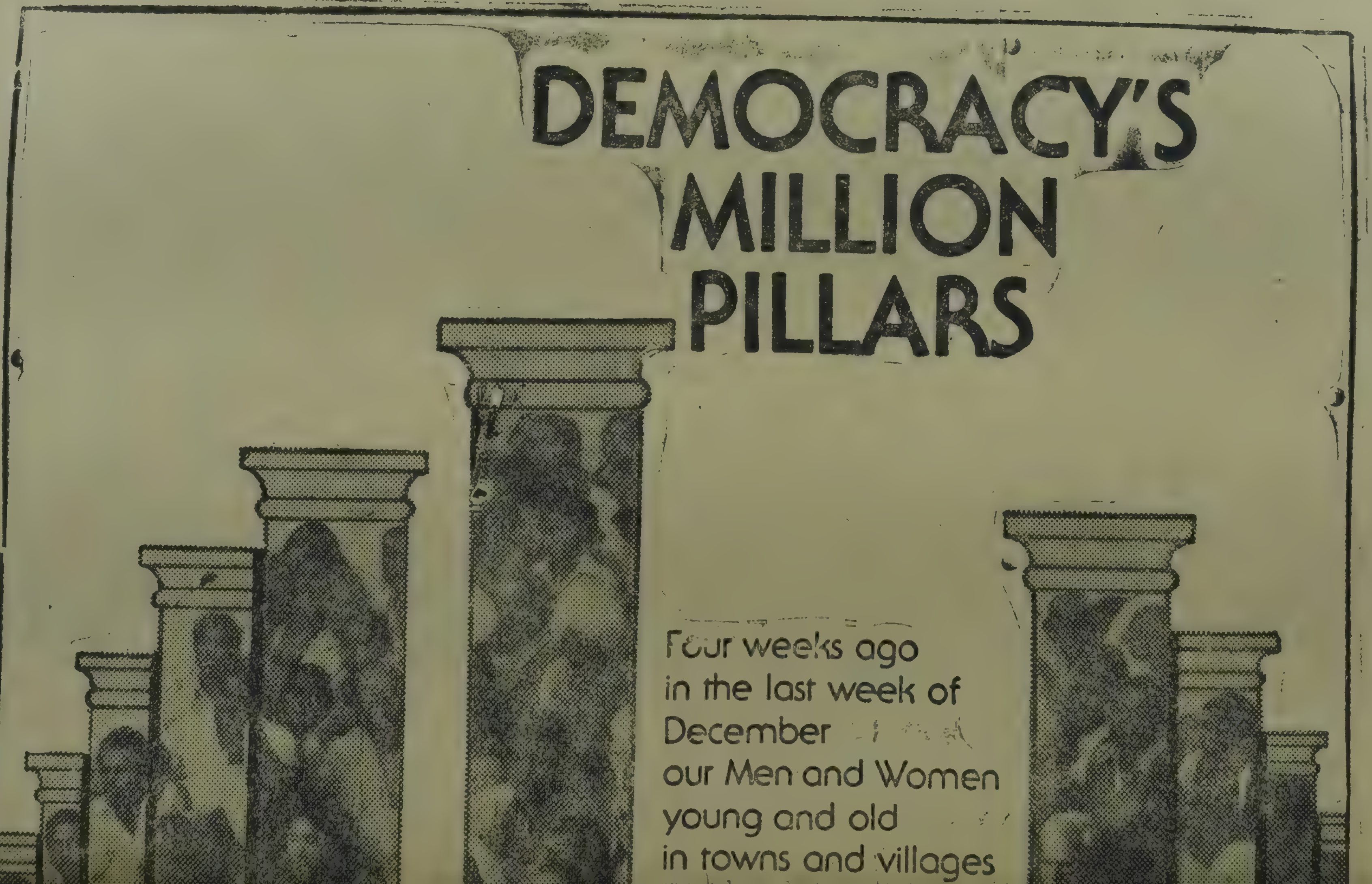
We Congratulate...

(1) Dr. M.A. Chansarkar who has been appointed as Vice-Chancellor of the Nagpur University. Dr. Chansarkar takes over w.e.f. 16th February 1985.

(2) Dr. Sukhdev Singh, Vice-Chancellor of the Punjab Agricultural University, Ludhiana who has been elected President of the Indian Agricultural Universities Association (IAUA) at the 13th Convention of this Association which was held at Andhra Pradesh Agricultural University, Hyderabad recently.

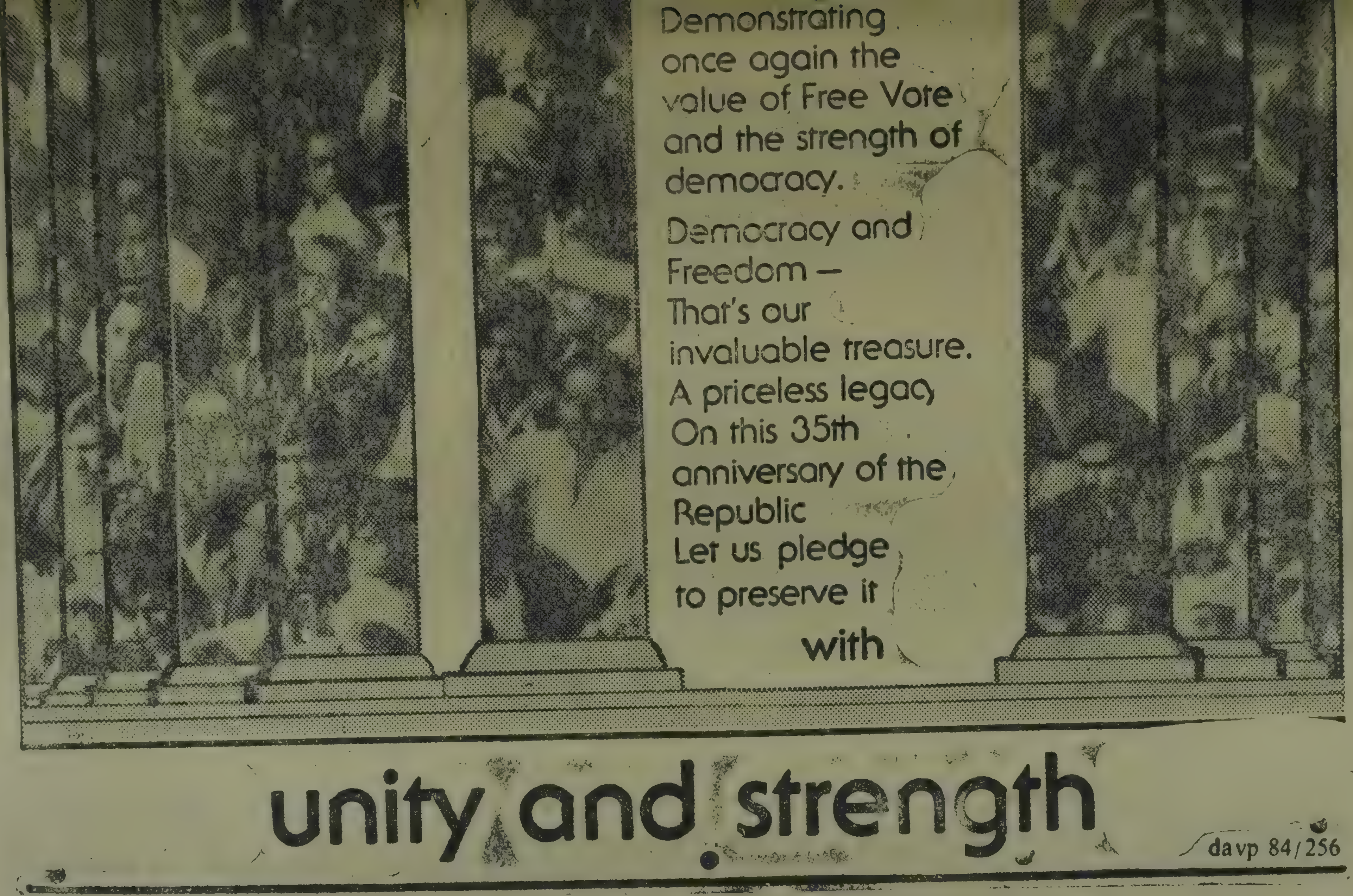
(3) Shri Kirpa Narain, Vice-Chancellor, G.B. Pant University of Agriculture and Technology, Pantnagar who has been elected as Vice-President of IAUA.

(4) Shri P.N. Bhandari, Vice-Chancellor, Mohan Lal Sukhadia University, Udaipur who has been elected as the Secretary-cum-Treasurer of IAUA.



DEMOCRACY'S MILLION PILLARS

Four weeks ago
in the last week of
December
our Men and Women
young and old
in towns and villages



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anniversary of the
Republic
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to preserve it
with

unity and strength

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News from Agril. Varsities

Mango blossom protection training campaign by KKV

The protection of inflorescence has assumed greater importance in the cultivation of mango in the Konkan region owing to the high incidence of pests and diseases.

The Konkan Krishi Vidyapeeth, for the last three years, has been organising training programmes for farmers in the mango growing areas of the Konkan region. Mango inflorescence protection training campaign has been taken up by the Konkan Krishi Vidyapeeth in Raigad, Ratnagiri and Sindhudurg districts of the Konkan region (Maharashtra) from 12th November, 1984 and the same will continue till the end of January, 1985.

In order to carry out this training programme effectively, the entire region has been divided into five operational zones. A team of scientists comprising a Horticulturist, an Entomologist and a Plant Pathologist from the Konkan Krishi Vidyapeeth has been formed for each zone. These teams, with the help of the field extension staff from the Zilla Parishads and Training and Visit project organize meetings in the centrally located villages and survey the area for recording the incidence of mango pests and diseases. The team members discuss with the farmers the problems and difficulties experienced by them in protecting the mango inflorescences. They then provide the latest scientific and technical information about the major pests and diseases of mango and demonstrate ways to control them effectively. The university has also brought out a folder giving detailed information about the pests and diseases attacking the mango inflorescence and the recommended measures to control them effectively.

The necessary media support through radio, newspapers, Agricultural magazines and doordarshan has been organized to create an awareness amongst the farmers of the region. This training programme has become very popular and the demand for such training programmes in respect of other crops is also growing. The mango growers in the Konkan region are responding and co-operating willingly to make this programme effective and a success.

ICAR grant to PAU for maize research

The Indian Council of Agricultural Research (ICAR) has sanctioned a sum of Rs. 4.6 lakhs to the Punjab Agricultural University for conducting research on genetical and physiological studies of maize on tolerance to stress, caused by excess water. The research work will be conducted in the Department of Plant Breeding. The objective is to develop new varieties of maize capable of giving high yields even in the years of excess rains.

According to Dr A.S. Khehra, Senior Maize Breeder-cum-Head of the Department of Plant Breeding and Princinal Investigator of the Scheme, the maize yield in Punjab is generally lower in years of high rainfall than in the years of low rainfall. Research under the new project will greatly help in stabilising maize production in the state.

The varieties developed by the Department of Plant Breeding in recent years i.e. Partap, Navjot and Ageti 76, have created a good impact. Maize yield per acre has considerably increased in Punjab even though the better managed—fertile and irrigated—area has shifted from maize to rice. The area under improved varieties has increased from 10-15 per cent to about 50 per cent. Consequently, the productivity has increased from 15 quintal per ha. to 19 quintal per ha. Maize yield at the national level is said to be only about 10 to 11 quintal per ha.

News from Abroad

Australia co-operates in wheat rust research for India

A project commissioned by the Australia Centre for International Agricultural Research (ACIAR) aims at developing strains of wheat with long-term resistance to rust diseases. Wheat, it is said, is especially prone to rust when grown in sub-tropical regions.

India is now a major wheat producer. The annual world wheat harvest is about 400 million tonnes. In the period 1978-80, India produced 32 million tonnes and Australia by comparison produces around 18 million tonnes per year.

High-yielding strains developed for sub-tropical climates, have contributed significantly to the upswing in production in India. These strains, however, possess elements of common ancestry. They are therefore more likely to be affected by the same types of rust—an ideal situation for the proliferation of the disease.

Sydney University has operated the Castle Hill Plant Breeding Research Institute, one of the foremost laboratories for investigation of wheat rust, for 60 years. The laboratory plays a major role in the National Wheat Rust Control Programme—a nation-wide campaign against rust that was initiated in 1975.

Dr. R.A. McIntosh, the director of the Plant Breeding Research Institute at Castle Hill, will be the Australian co-ordinator for the ACIAR project. In the initial stages of the programme plant breeders and plant pathologists from India will work with Australian research workers at the Institute. Until now, collaboration has been difficult because of differences in rust varieties in the region, differences in the types of wheat grown, and variations in climate and research facilities. A joint programme will establish a common basis for further research.

Guidelines from the National Wheat Rust Control Programme in Australia will form the basis of the research programme. Representative strains of wheat will be grown in greenhouses and exposed to a wide range of rust disease type encompassing stem, stripe and leaf species. Plants which show resistance will be marked for further investigation. At a later stage similar trials will be carried out.

A separate programme will breed rust resistance into wheat varieties, chosen for their high-yielding qualities. These new resistant types will be available in the region and also shared with other developing countries through CIMMYT, the international maize and wheat improvement centre based in Mexico.

As part of further efforts to give the project more international impact, a workshop held in India during the later stages of the project will bring together rust pathologists and wheat breeders of international standing. They will meet workers from India's wheat research programme, and discuss the implications of the work of the ACIAR project and results obtained.

[Courtesy : Australian Information Service—Agricultural Newsletter]

Who Enter Soviet Institutions of Higher Learning?

After successful entrance examinations more than a million young men and women have been admitted to 892 institutions of higher learning in the country.

Who are these young people? There is no official statistics in the USSR as to the nationality, or social, more so material, position of students. All these factors are of no importance in the country, since the accessibility of higher education is ensured, first of all, by free tuition (incidentally, the education of every student costs the state an average of 1,100 roubles a year). The only criterion for admission is the level of knowledge. However, of late considerable attention has been laid to how conscientiously the young people approach the question of choosing their future profession. Hence the growing role of correct professional guidance.

Yet, on the basis of some sociological studies we may have at least a general picture of the composition of Soviet students. In 1970, workers and children of workers accounted for a little more than a third of the first-year students; ten years later their number amounted to about a half. At present, a little less than a quarter of all students are from the countryside.

The preparatory departments, which exist practically at all Soviet institutionsof higher learning, help the further democratisation of the composition of students. These departments are attended by about 100,000 young workers, peasants and demobilised soldiers annually. After a year of studies during which they are given refresher courses, if they show good progress, they are admitted to corresponding institutions without taking competitive examinations.

Educational super centres

The paper *Sovetskaya Rossia* organised a readers' discussion of the ways of the advancement of engineering education in the USSR. It has printed the completerecords of a meeting in its editorial office of a group of institute directors and plant managers. The sides have not ably agreed that it is more expedient to set up educational super-centres for up to 100,000, or even 150,000 students than ordinary institutes. This will help concentrae research equipment and teaching staff in such centres.

[Courtesy: Soviet Features Vol. XIII No. 173]

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REGISTRAR

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Established in 1965, the AIU Library has acquired over the years a valuable collection of books and documents on Higher Education. Among the topics prominently represented are Educational Sociology, Educational Planning, Educational Administration, Teaching & Teachers' Training, Examinations, Economics of Education and Country Studies. Developing fields of Adult Education, Continuing Education and Distance Education, and Educational Technology are also well stocked. The Library is particularly strong in its collection of reports whether they are on the setting up of different universities or on the state of Higher Education. Files of Annual Reports of different universities are also maintained. Readers are kept informed of the latest acquisitions through our column 'Additions to AIU Library'.

The Library also receives about a 100 periodical titles on Higher Education. All these are indexed regularly and a select list appears every month as 'Current Documentation in Education'.

Doctoral Degrees awarded during the preceding month are reported as 'Theses of the Month' while registrations made for such degrees are flashed as 'Research in Progress'. Bibliographies are also compiled and supplied on demand.

Research scholars and students of education are welcome to use these resources. The Library is situated at 17-B, Indraprastha Marg, New Delhi-110 002. It is open from 10 a.m. to 5 p.m. Monday through Saturday except Second Saturday. Access can also be had through inter library loan for which requisition must be made through your Librarian.

THESES OF THE MONTH

A list of Doctoral Theses Accepted by Indian Universities

BIOLOGICAL SCIENCES

Anthropology

1. Bujarbaruah, P.M. *Effects of migration and environment on physical and genetical characters of some Santal and Munda populations of Assam.* Dibrugarh U.

Marine Sciences

1. Ajitha Kumar, B.S. *Reproductive physiology of Indian species of the genus, Perna (Family-Mytilidae).* U Cochin.

2. Satyanarayana Murty, A. *Studies on storm surges and sea-level variations along the East Coast of India.* U Cochin.

Microbiology

1. Kundu, Paresnath. *Microbial production of calcium gluconate.* U Calcutta.

2. Mehra, Kailash Nath. *Observations on pathogenic fungi associated with deep mycosis in bovines with particular reference to sero-diagnosis of* **Candida albicans.** J N Krishi, Jabalpur.

3. Singh, Ashwini Kumar. *Studies on* **Aspergillus fumigatus** *associated with chicken infections and its serodiagnosis.* J N Krishi, Jabalpur.

Biochemistry

1. Bandyopadhyay, Mita. *Studies on fermentative production of bakers' yeast by* **Saccharomyces cerevisiae.** U Calcutta.

2. Chattopadhyay, Bharati. *Studies on ascorbic acid in iron deficiency anaemia and haemotytic anaemia.* U Calcutta.

3. D'Sooza, Mary Juliana. *Purification and characterisation of hylauronic acid binding protein from rat brain liver.* JNU, Delhi.

4. Dudani, Anil Kumar. *Dissection of biochemical events of yeast cell cycle.* JNU, Delhi.

5. Gupta, Rashmi. *Chemical and biomedical effects of feeding of* **P. sativum** *seed diet in the rabbits.* Meerut U.

6. Kondreddy, Rambaby. *Enzymes and inhibitors in biological fluids in health and disease.* U Ker, Trivandrum.

7. Pradhan, Rohit Kumar. *Biochemical studies of some tissues of* **Nimacheilus evezardi** *Day from Kotumsar Cave.* RSU, Raipur.

8. Shah, Sarita L. *Metabolism of L-ascorbic acid in animal prostate.* Nagpur U.

9. Subrahmanyam, G. *Biochemical-genetics of alcohol dehydrogenase gene-enzyme system in* **Drosophila melanogaster:** *A comparative study of the normal, variant and mutant enzymes during ageing.* U Hyderabad.

Botany

1. Babu, Tummala Rajendra. *Structure, ontogeny and seasonal variation of the phloem of tropical trees.* SPU, Vallabh Vidyanagar.

2. Chaudhuri, Subha Acharya. *Physiobiochemical and genetical studies on the effects of chemical mutagen in some rice varieties.* U Burdwan.

3. Chinchanikar, G.S. *Studies on tissue cultures from floral organs of some solanaceous plants.* U Poona.

4. Dinesh Kumar. *Biochemical studies of* **Cicer arietinum** *Linn.,* **Pisum sativum L** *and* **Vicia faba L.** *under the stress of fluoride pollutants.* Meerut U.

5. Joshi, H.V. *Studies on an Indian sea-weed: Physiological ecology of* **Sargassum** *of Okha.* Bhavnagar U.

6. Joshi, Pradeep G. *Fungi of Maharashtra with special reference to Raigad District and succession of some fungi.* U Poona.

7. Kole, Sadanada. *Studies on physiological maturity and seed quality of sunflower and safflower cultivars.* U Burdwan.

8. Lohit Nath. *Induction of mutations in* **Lens esculenta** *Moench by gamma irradiation and study of their morphology and breeding behaviour.* Gauhati U.

9. Mandal, Swapan Kumar. *Production of gluconic acid by* **Penicillium** *species.* U Burdwan.

10. Manikya Reddy, P. *Ecological studies in the river Tungabhadra (A.P.) with special reference to the effect of paper mill effluents on the river.* OU, Hyderabad.

11. Mishra, Ajay Shanker. *Some studies on soil fungistasis*. H.S. Gour, Sagar.

12. Nadaraja Panikkar, M.V. *Studies on an Indian brown alga: Reproductive, morphology and culture studies of* **Padina doubia** *Hauck*. Bhavnagar U.

13. Ranade, Sujata. *The assessment of naturally occurring substances as plant growth regulatots*. U Poona.

14. Rao, Lalitha. *Physiological and biochemical studies on some edible mushrooms of West Bengal*. U Calcutta.

15. Ravindranath, Koganti. *Studies in compositae*. SPU, Vallabh Vidyanagar.

16. Sarbjit Singh. *Studies on genotypic variations in periwinkle,* **Catharanthus roseus.** *G. Don and its response to different soil moisture regimes*. PAU, Ludhiana.

17. Sarkar, Banwarilal. *Ecological studies on* **Vibrio parahaemolyticus** *with special reference to roles of plankton and water in Calcutta*. U Burdwan.

18. Seetharam, Y.N. *Clusiaceae: Palynology and systematics*. Bangalore U.

19. Senad, Vaijayanti A. *An appraisal of flora of Deccan Intertrappean series of India*. Nagpur U.

20. Sharma, Rajendra Kumar. *The effects of growth regulators and herbicides on the tubers of* **Scirpus tuberosus,** Meerut U.

21. Singh, Satya Vir. *Phenotypic stability and genetic divergence for yield and quality characters in potato*, **Solanum tuberosum** *L*. Meerut U.

Zoology

1. Aruna Kumari, Budithi. *Studies on thiarid snails of Andhra Pradesh with special reference to* **Melania crenulata** *Deshayes*. Andhra U, Waltair.

2. Chaudhuri, Anita. *Some aspects of biochemical studies in* **Ascaridia galli,** *with a note on the effect of ascaridiasis on the liver of the host*. U Burdwan.

3. Das, Asit Kumar. *A study on the growth and some biochemical factors in the embryonic development of the silkmoth*, **Bombyx mori** *L*. U Burdwan.

4. Ghosh, Amitabh. *Studies on the morphology, anatomy, histophysiology of the digestive organs and their relationship with the food and feeding habits in the Indian freshwater featherback*, **Notopterus notopterus** *and* **Notopterus chitala** *Ham*. U Burdwan.

5. Gupta, Satis Kumar. *Reproductive biology of Indian pied myra*, **Sturnus contra contra** *L*. U Calcutta.

6. Gupta, Usha. *Effect of host's nutrition on the susceptibility to* **Entamoeba histolytica** *and immune responses to amoebic antigen*. Meerut U.

7. Mallick, Bani. *Studies on the reproductive biology of* **Acridothers tristis tristis** *with special reference to the adreno-gonadal interactions*. U Burdwan.

8. Pancharatna, Madgiri. *Studies on the development and atresia of ovarian follicles in the frog*, **Rana cyanophlyctis** *Schn*. Kar U, Dharwad.

9. Patel, Bhismadeb. *Studies on the respiratory metabolism of the brain tissues of the Indian murrel*, **Channa punctatus**. RAU, Samastipur.

10. Pathan Khusru Jameel Khan Mehboob Aly Kha. *The parathyroid and the ultimobranchial glands in some lower vertebrates: A histophysiological study*. Kar U, Dharwad.

11. Patil, Ganesh S. *Histomorphology of reproductive system and caudal neuromyology of* **Scolopendra amazonica** *Bucherl*. U Poona.

12. Sadhu, Arup Kumari. *Toxicity of some insecticides on alimentary system of* **Channa striatus.** U Burdwan.

13. Sarangi, Niranjan. *Ecology of macrobenthos in some sewage water and brackish water impoundments of West Bengal, India*. U Calcutta.

14. Thomas, E.I. *Studies on the anatomy, mode of action and evolution of the heart of some Indian vertebrates*. **D.Sc.** U Ker, Trivandrum.

15. Verma, Sidh Nath. *The studies on the coccinellid predators with the view to utilize them in the integrated control of vegetable aphids*. RDV, Jabalpur.

16. Yadav, Ram Awadh. *Studies on biology, ecology and control of* **Cacelerius exacavatus** *Dist. (Hemiptera: Lygaeidae)*. CSAT, Kanpur.

17. Yajurvedi, Hanmanth Narasinhacharye. *Some studies on the interrenal gland and testis in relation to the pituitary gland in the Indian skipper frog*, **Rana cyanophlyctis** *Schn*. U Ker, Trivandrum.

Agriculture

1. Awasthi, Budhi Kishore. *Studies on the effect of different rice varieties on the growth and development of* **Sitotroga cerealella** *Olivier*. CSAT, Kanpur.

2. Bhoopal Singh. *Direct, residual and cumulative effect of nitrophosphates on the availability and uptake of phosphorus by paddy and wheat crops in rotation*. CSAT, Kanpur.

3. Bowry, Swaroop Kumar. *Studies on the relative efficacy of different fumigants against certain insect-pests of stored grains*. CSAT, Kanpur.

4. Choudhary, Deo Nath. *Improvement in brinjal*, **Solanum melongena** *L. by intervarietal and interspecific hybridization*. RAU, Samastipur.

5. Dahiya, Brahma Nand. *Studies on comparative efficacy of different selection methods in greengram*, **Vigna radiata** *(L) Wilczek*. HAU, Hissar.

6. Grover, Usha. *Study of the interactions of surfactants and amylase supplements on bread crumb*. PAU, Ludhiana.

7. Hazarika, Girindra Nath. *Studies on genetic divergence, gene effects and extent of heterosis in pigeonpea*, **Cajanus cajan** *(L) Millsp*. PAU, Ludhiana.

8. Janku Ram. *Studies on the biology and control of woolly apple aphid*, **Erisoma lanigerum** *Hausmann with special reference to alates and root population*. HP Krishi, Palampur.

9. Jayant Kumar. *Effect of various systems of orchard soil management at different levels of nitrogen in sant rosa plum*. HP Krishi, Palampur.

10. Kaistha, Brahm Parkash. *Studies into forms of nitrogen, ammonium fixation and nitrogen transformation in important soils of Himachal Pradesh, India*. HP Krishi, Palampur.

11. Kerkhi, Saiduddin Ahmad. *Studies on genetic parameters in relation to quality attributes in spring wheat*, **T. aestivum L.** CSAT, Kanpur.

12. Khan, Mohammad Ashraf. *Studies on epidemiology and control of bean anthracnose*. HP Krishi, Palampur.

13. Khan, Nisar Ahmed. *Complementary use of some organic wastes in wetland transplanted rice and their residual effect on wheat in Kangra Valley (H.P.)*. HP Krishi Palampur.

14. Khan, Shamim Ahmad. *Water relations, growth and nutrient uptake of safflower*, **Carthamus tinctorius** *L. as influenced by irrigation, plant population and nitrogen under gangetic alluvium of Central Uttar Pradesh*. CSAT, Kanpur.

15. Kripal Singh. *Studies on irrigation scheduling, fertility and plant population requirement of summer sown black gram T-9*. CSAT, Kanpur.

16. Mangat, Iqbal Singh. *Relative effectiveness of selected media combinations in imparting training to the farmers by the F.T.C. Ludhiana*. PAU, Ludhiana.

17. Mishra, Amar Nath. *Studies on twig and stem blight of pigeonpea*, **Cajanus cajan** *(L.) Millsp*. CSAT, Kanpur.

18. Mishra, Ramesh Chandra. *Studies on phylloplane mycoflora of triticale in relation to leaf rust disease*. Meerut U.

19. Nehra, Darshan Singh. *Seed and fibre quality as influenced by nitrogen levels, genotypes and time of picking in cotton*. HAU, Hissar.

20. Pandey, Kamala Kant. *Field investigation of N requirement of mustard*, **Brassica juncea** *Coss in association with sugarcane in regular and border method*. CSAT, Kanpur.

21. Prem Singh. *Seed setting studies in chicory*, **Cichorium intybus** *L*. HP Krishi, Palampur.

22. Rai, Dushyant. *Growth trend of area, production and productivity of oilseed crops in Uttar Pradesh: An econometric study*. CSAT, Kanpur.

23. Ramphal. *Genetical studies on resistance in garden peas to* **Fusarium** *Wilt*. Meerut U.

24. Ravindra Singh. *Analysis of quantitative genetic variability for yield and its components in wheat,* **Triticum aestivum** *L. em. Thell.* CSAT, Kanpur.

25. Sadhu Singh. *Studies on gene action of major components of yield and adaptation in green gram,* **Vigna radiata** *(L.) Wilczek.* CSAT, Kanpur.

26. Sapra, Krishan Lal. *Seasonal variation in performance traits of poultry.* PAU, Ludhiana.

27. Shinde, Gopinath Sambhajirao. *Nutritional studies in Nagpur mandarin,* **Citrus reticulata** *Blanco and mosambi orange,* **Citrus sinensis** *Osbeck.* Marath Krishi, Parbhani.

28. Shukla, Murari Prasad. *Pesticide and fertilizers compatibility used in soil and foliar feeding.* CSAT, Kanpur.

29. Singh, Chandra Pal. *Pattern of income distribution, investment and saving in farming in IADP Distt, Aligarh.* CSAT, Kanpur.

30. Singh, Kedar Nath. *Genetic analysis of certain quantitative and quality traits in pea,* **Pisum sativum** *L.* CSAT, Kanpur.

31. Singh, Vijai Shanker. *Partial diallel analysis in pea,* **Pisum sativum** *L.* CSAT, Kanpur.

32. Srivastava, Jai Prakash. *Endocrinological studies in* **Sarcophage ruficornis** *F. (Sarcophagidae: Diptera) and their possible use in insect control.* CSAT, Kanpur.

33. Sudershan Kumar. *Studies on bacterial blight of guar,* **Cyamopsis tetragonoloba** *(L) Taub, caused by* **Xanthomonas campestris** *pv.* **cyamopsidis** *(Patel, Dhando and Kulkarni)* HAU, Hissar.

34. Todi Singh. *Studies on the zinc nutrition of pulse crops.* CSAT, Kanpur.

Veterinary Science

1. Ali, Mohammad Ashraf. *Feeding of triphenyl ethylene to improve the growth rate in broiler chicks.* PAU, Ludhiana.

2. Brij Bhushan Kumar. *Studies on enteric colibacillosis in laboratory rabbits,* **Oryctolagus cviculus.** HAU, Hissar.

3. Chougule, Bashir Ahamad Abbas. *Effects of breed, sex, slaughter weight and gain in weight on production and quality of sheep mutton.* MP Krishi, Rahuri.

4. Khanna, Raghunath Singh. *Studies on the pathology of chlamydial abortion in sheep.* HAU, Hissar.

5. Ramakrishna Reddy, Gorantla. *Influence of lactic cultures on the stability of minced mutton.* HAU, Hissar.

CURRENT DOCUMENTATION IN EDUCATION

A list of select articles culled from periodicals received in AIU Library during December, 1984

EDUCATIONAL PHILOSOPHY

Nolte, Ernst. Thoughts on the state and prospects of the academic ethic in the Universities of the Federal Republic of Germany. *Minerva* 21 (2-3), 1983, 161-71.

Riesman, David. Some personal thoughts on the academic ethic. *Minerva* 21 (2-3), 1983, 265-84.

Shamsuddin. University education today. *Progress Edn.* 59(5), 1984, 95-8.

Wilson, James Q. The academic ethic. I. Partisanship, judgement and the academic ethic. *Minerva* 21 (2-3), 1983, 285-91.

Ulam, Adam. The academic ethic. II. The dangers lie within the universities themselves. *Minerva* 21 (2-3), 1983, 292-95.

EDUCATIONAL PSYCHOLOGY

Frederiksen, Norman. Implications of cognitive theory for instruction in problem solving. *Rev Edul Res* 54 (3), 1984, 363-407.

Pal, Anuradha. A comparative study of some psychological characteristics of the creative high and low socio-economic groups of college students. *Indian Ednl Rev* 19 (2), 1984, 69-73.

Ravindranath, M. J. Development of scientific attitude: An experimental study. *J Indian Edn* 9 (4), 1984, 28-32.

EDUCATIONAL SOCIOLOGY

Bowen, Howard R. Graduate education and social responsibility. *New Directions Hr Edn* (46) 1984, 113-19.

Inamdar, Hemant V. A separate university for women. *Progress Edn* 59 (5), 1984, 90-94, 98.

Uplaonkar, Ambarao T. Social background and occupational aspirations of college students: A case of scheduled castes vis-a-vis non-scheduled castes students in higher education. *J Hr Edn (D)* 8 (1), 1982, 63-74.

EDUCATIONAL ADMINISTRATION

Cardozier, V. R. Upper-level colleges yesterday, today and tomorrow. *Ednl Rec* 65 (3), 1984, 30-35.

Mehrotra, Chandra M. N. Responding to institutional concerns and faculty needs. *New Directions Teaching Learning* (19), 1984, 83-97.

Mayers, Betty Jane and Pearson, Richard E. Personal perspectives of academic professionals approaching retirement. *New Directions Teaching Learning,* (19) 1984, 67-74.

Rasool, G. and Shishoo, Reeta. Priorities in national policy on education. *EPA Bulletin* 7 (1&2), 1984, 1-5.

Rugg, Edwin A. and others. Faculty orientations toward institutional goals: A broken front with implications for planned change. *Res Hr Edn* 15 (2), 1981, 161-173.

Sharma, D. K. Decision-making and organisational health in an I. I. T. *University News* 22 (40) Oct., 23, 84, 2-5.

Shattock, M. L. and Berdahl, R. O. The UGC idea in international perspective. *Hr Edn* 13 (5), 1984, 613-18.

Slocum, Joel. Trends and prospects in foreign student admissions. *College Board Rev* (132) 1984, 23-5, 33.

Weathersby, George B. Our fading State Colleges : Have they lost their vitality and mission? *Change* 16 (1), 1984, 18-23, 49.

CURRICULUM

Passer, Moses. A university-industry association model for curriculum enhancement. *New Directions Hr Edn* (46) 1984, 71-76.

TEACHING

Lawrence, Janet H. Faculty age and teaching. *New Directions Teaching Learning* (19) 1984, 57-65.

Marshall, Hermine H. and Weinstein, Rhona S. Classroom factors affecting students' self-evaluations: An interactional model. *Rev Ednl Res* 54 (3), 1984, 301-25.

Rami Reddy, A Venkata. Do students achieve better in regional medium than in English medium? *Indian Ednl. Rev* 19 (2), 84, 79-90.

Szepe, Gyorgy. Mother tongue, language policy and education. *Prospects,* 14 (1), 1984, 63-73.

EDUCATIONAL RESEARCH

Byrne, Barbara M. The general/academic self-concept nomological network: A review of construct validation research. *Rev Ednl Res* 54 (3) 1984, 427-56.

SCIENCE EDUCATION

Rudd, David. The intimidating bastion of scientific knowledge : A way to breach the ramparts. *Studies Hr Edn* 9 (2), 1984, 113-21.

EVALUATION

Lamszus, Hellmut. The assessment of pupils' achievements. *Education*, (29) 1984, 50-64.

PROFESSIONAL EDUCATION

Queeney, Donna S. The role of the university in continuing professional education. *Ednl Record* 65 (3), 1984, 13-14.

ECONOMICS OF EDUCATION

Corman, Hope and Davidson, Patricia K. Economic aspects of post-secondary schooling decisions. *Eco Edn Rev* 3 (2), 1984, 131-39.

Elizabeth and Urrows, Henry. Hard times, dropped expectations. *College Board Rev.* (132) 1984, 17-23.

Garg, V. P. Budget formulation for educational planning: Economic versus financial approach. *EPA Bulletin* 7 (1&2), 1984, 41-50.

Mincer, Jacob. Human capital and economic growth. *Eco Edn Rev* 3 (3), 1984, 195-205.

ADULT EDUCATION

Bhagia, Sushma. Developments in non-formal education. *Edn Q* 36 (3) 1984. 10-15.

Riley, Judith. An explanation of drafting behaviours in the production of distance education materials. *British J. Ednl. Tech.* 15 (3), 1984, 226-238.

Sharma, Inder Prabha. Non-formal education for the third world. *Edn Q*, 36 (3), 1984, 7-9.

Singhal, R. P. Linking formal and non-formal education. *Edn Q*, 36 (3), 1984, 1-6.

COMPARATIVE EDUCATION AND COUNTRY STUDIES

Crovitz, Golden. The decline and fall of Unesco. *Encounter* 63 (5), 1984, 9-18.

Harman, Grant. Australian experience with co-ordinating agencies for tertiary education. *Hr Edn* 13 (5), 1984, 501-515.

Zeugner, John F. What can we learn from the Japanese? The puzzle of higher education in Japan. *Change* 16 (1), 1984, 24-31.

CLASSIFIED ADVERTISEMENTS

UTKAL UNIVERSITY

Advertisement No. Estt. I/A-260/ A-510/85

Dated : 10-1-1985

Applications in Seven copies are invited so as to reach by the **30th January, 1985** (in the University Office) in the prescribed form alongwith attested copies of Certificates and Mark-lists of all examinations passed for the following numbers of part-time Lecturers in Law for the University Law Colleges on a consolidated pay of Rs. 400/- p.m.

1. M.S. Law College, Cuttack. : 4 (Four).

2. University Law College, Bhubaneswar : 1 (One).

N.B. : A panel will be drawn up for other vacancies, if any, for one year.

Essential Qualifications

Law Graduate with 2nd Class LL.B. with Five years practice at the Bar,

OR

Law Graduate with 1st class LL.B. with 3 years Practice at the Bar,

OR

LL.M. (50% of marks).

Note Please

Persons who have been appointed for two terms as Part time Lecturers under this University need not apply, as per UGC rules.

Prescribed application forms can be had from the Office of the Registrar, Utkal University (Information Counter) in person on payment of Rs. 7.60 (Rupees seven and paise sixty only) including Sales Tax before 1.30 p.m. on each working day, or by post on receipt of a crossed Postal Order of Rs. 10/- (Rupees ten only) payable to the Finance Officer, Utkal University, Vani Vihar, BBSR-4. No application forms would be issued or received beyond the date and time fixed above.

The University reserves the right to reject any or all applications and also to fill up the required number of posts, as it requires to be filled up.

REGISTRAR

ANNAMALAI UNIVERSITY
ANNAMALAINAGAR

Dated : 9th January, 1985

Applications are invited for filling up of the post of Reader in Agricultural Chemistry in the prescribed form obtainable on payment of Rs. 10/- to the Registrar, Annamalai University, Annamalainagar 608002 by Cash/Money Order/Postal Order (not refundable). Completed application forms (with 5 additional copies should reach the undersigned on **or before 31st January 1985.**

Scale of Pay

Rs. 1200-50-1300-60-1900 with usual allowances.

Qualifications

A person with Ph.D. degree with 5 years of experience in Teaching/ Research in the subject concerned.

Such of those who are already in service should route their applications through proper channel.

REGISTRAR

ANNAMALAI UNIVERSITY
ANNAMALAINAGAR

Dated : 10th January, 1985

Department of Music

Applications are invited in the prescribed form for filling up of the following teaching posts. Applications can be had from the undersigned on payment of Rs. 10/- (not refundable) by Cash/Money Order/Postal Order. Applications (with 5 additional copies) should reach the undersigned **on or before 31-1-1985.**

Sl. No.	Name of the Post	No. of Post
1.	Lecturer in Music (Vocal)	One
2.	Lecturer in Music (Mridhangam)	One

Scale of Pay

Rs. 700-40-1100-50-1600 with usual allowances.

Qualifications

(a) A person with a good academic record with atleast second class Master's degree in a relevant subject or an equivalent degree or diploma recognised by the University, and

(b) Two years' research professional experience or equivalent creative work and achievements in his field of specialisation or a combined research and professional experience of three years in the field as an Artiste of outstanding talent.

OR

A traditional or professional artiste with highly commendable professional achievement in the subject concerned.

A.R. Lakshmanan
REGISTRAR

MASS COMMUNICATION RESEARCH CENTRE
JAMIA MILLIA ISLAMIA

JAMIA NAGAR, NEW DELHI-110025

Advertisement No. I/1985

The Mass Communication Research Centre invites applications for the following posts:

Teaching Posts

1. Reader in Research & Evaluation (1200-1900)—One

2. Lecturer-Editing (700-1600)-One
3. Lecturer-Graphics (700-1600)-One

Non-Teaching & Technical Posts

1. Engineer-in-charge (1500-2000)-One
2. Engineer Maintenance (1100-1600)-One
3. Asstt. Engineers (700-1300)-Two (One each for Electrical and Air-conditioning)
4. Cameraman Grade-II (550-900)-Three
5. Unit Manager (550-900)-One.

D.A.; C.C.A.; H.R.A.; P.F.; Gratuity Pension and other benefits will be given as per Jamia Rules.

Details of prescribed qualifications and application forms can be had from the Administrative Officer, Mass Communication Research Centre on any day except Sundays and Holidays, either personally between 10-00 a.m. to 12-00 Noon or by sending a self addressed and stamped envelope. Application should be accompanied with crossed Indian Postal Order or Bank Draft for Rs. 7/- (Rs. 2/- for SC/ST candidates in the name of Administrative Officer, Mass Communication Research Centre, Jamia Millia Islamia, Jamia Nagar, New Delhi-110025.

The last date for application is **1-2-1985.**

Note

12.5% Non-teaching posts shall be filled from amongst members of the Scheduled Castes and 5% from amongst the members of the Scheduled Tribes.

Relaxation in any of the qualifications may be made on the recommendation of the Selection Committee in exceptional cases.

M.B. Mughal
ADMINISTRATIVE OFFICER

KARNATAKA REGIONAL ENGINEERING COLLEGE

SURATHKAL, DAKSHINA KANNADA
P.O. SRINIVASNAGAR-574157.

Dated : 8-1-1985

Staff Recruitment

Applications in the prescribed form are invited for the following posts so as to reach the Principal not later than **28-2-1985.**

1. **Professors** : 2 (two) Posts—Civil Engineering-1, Mining Engineering-1. (Rs. 1500-60-1800-100-2000-125/2-2500). Total salary inclusive of allowances in the minimum of the grade Rs. 2,724/-.

2. **Asstt. Professors** : 2 (two)—Electronics & Communication-1, Mining Engineering-1. (Rs. 1200-50-1300-60-1900). Total salary inclusive of allowances in the minimum of the grade Rs. 2,375.30.

3. **Lecturers** : 15 (fifteen) posts—Civil Engineering-1, Applied Mechanics-5, Electrical Engineering-1, Electronics & Communication-5, Mechanical Engineering-2, Metallurgy-1. (Rs. 700-40-1100-50-1600) Total salary inclusive of allowances in the minimum of the grade Rs. 1,540-70.

Higher starts in pay will be considered in deserving cases. Qualifications for the post of Professor, Assistant Professor and Lecturers will be as prescribed by U.G.C./A.I.C.T.E. If candidates with Post-graduate qualifications are not available or not found suitable for the post of Lecturers, first class Engineering Graduates will be considered for appointment as Lecturers.

In case a candidate for the advertised post is not found suitable for that post, the next lower position can be offered to the candidate, if he is found suitable for the lower position.

Further details concerning qualification etc. will be supplied along with the application form.

Application forms and details of prescribed qualifications and other particulars can be obtained by sending a crossed Indian Postal Order for Re. 1/- (for each application form), payable to the Principal of the College at Srinivasnagar Post Office along with a self addressed envelope of size 25×10 cm. affixed with postage of Rs. 1-10.

B.S. Basavarajaiah
PRINCIPAL

REGIONAL ENGINEERING COLLEGE, CALICUT

P.O. Calicut REC
Kerala-673601.

Advertisement No. P1-9360/84
Dated : 10-12-1984

Applications are invited in the prescribed form for the following posts:

I. Professors

1. Civil Engineering
   P.G. Professor in Traffic and Transportation Planning with special emphasis on Water Transportation.
   1 post—permanent
2. Electrical Engineering
   P.G. Professor in Energetics
   1 post—permanent
3. Applied Mechanics 1 (likely vacancy)

Qualification

An eminent scholar with a Doctorate degree in the subject concerned and published work of high quality actively engaged in research. Ten years experience of Teaching and/or research. Experience of guiding research at Doctoral level.

OR

An outstanding Engineer/Technologist with established reputation who has made significant contribution to knowledge.

Scale of Pay : Rs. 1500-60-1800-100-2000-125/2-2500 (UGC). Total emoluments at the minimum of the Scale Rs. 2600/.

Age as on 1-7-1985 : Maximum 50 years.

II. Assistant Professors

1. Civil Engineering
   Traffic and Transportation (PG course).
   1 post—permanent
2. Electrical Engineering
   Energetics (PG course)
   1 post—permanent

Qualification

Good academic record with a Doctor's degree in a relevant field. About 5 years experience of teaching and/or research and development.

Provided further that candidates not possessing Ph.D. may be considered if they have to their credit equivalent research, published work or design/development work of a high order either in the institution or in an industry.

OR

In the case of persons to be recruited from industry or professional fields, candidate should possess good academic record with recognised professional work of about 7 years which should include innovation and/or research and development.

Scale of Pay : Rs. 1200-50-1300-60-1900 (UGC). Total emoluments at the minimum of the scale Rs. 2300/-.

Maximum age as on 1-7-1985 : 45 years.

II. Lecturers in Engineering Departments

Department	**No. of Post**	
Mechanical	3	All posts are temporary, but likely to continue.
Civil	5	
Electrical & Electronics	5	

Qualification

(a) Master's degree in appropriate field in Engineering technology.

(b) Consistently good academic record with a bachelor's degree in Engineering/Technology. First class at Bachelor's degree and/or Master's degree level.

(c) One year's relevant professional experience outside academic/research institutions.

Having regard to the requirements of emerging fields of Engineering and of developing interdisciplinary programmes, the requirements of Engineering/technology degrees may be waived in the cases of otherwise well qualified candidates.

Provided further that if a candidate does not possess professional experience or a person possessing such experience is not found suitable, the person appointed will be required to obtain desired professional experience within a period of five years of his appointment failing which he will not be able to earn future increments, until he fulfils this requirement.

Note: For the post of Lecturer in Mechanical Engineering, candidates having Masters' degree with specialisation in Engineering Mechanics/Applied Mechanics (irrespective of their branch in the basic Engineering degree) are also eligible to apply.

Scale of Pay : Rs. 700-40-1100-50 1600/- (UGC).

Total emoluments at the minimum of the Scale Rs. 1533/-.

Maximum age as on 1-7-1985 : 40 years.

IV. Assistant Professor —1 permanent

Qualification

(i) A first or second class Master's Degree in Arts, Science or first class Bachelor's degree in Engineering from a recognised University.

(ii) Teaching experience for a minimum period of 5 years in a College or institution of equivalent standard.

Scale of Pay : (U.G.C.) Rs. 700-40-900-EB-40-1100-50-1300/.

Total emoluments at the minimum of the Scale Rs. 1533/-

Maximum age as on 1-7-1985 : 40 years.

V. Deputy Registrar—1 Probable

A first or second class degree in Arts, Science, Commerce or Business Administration. Not less than 12 years experience in a responsible position either in academic, business organisation or in Government Department. Experience in financial matters such as Budgeting, Store purchase, work connected with meetings.

Scale of Pay : (UGC) Rs. 700-40-900-EB-40-1100-50-1300/-.

Total emoluments at the minimum of the scale Rs. 1533/-.

Maximum age as on 1-7-1985 : 45 years.

VI. Hostel Manager—1 Probable

Must be a graduate. Preference being given to those with Account test or adequate knowledge of accounts. Must have put in at least 5 years in administration. Persons who have got experience in organisation preferably in hostels, reputed catering establishments will be preferred. Must have good personality and ability to manage hostel servants and to deal with students.

Scale of Pay (State Scale) : Rs. 750-30-990-40-450-50-1450/- +D.A. at Kerala Government rate.

Total emoluments at the minimum of the Scale Rs. 1295/-.

Maximum age as on 1-7-1985 : 45 years.

Age limits specified above shall not be applicable in case of candidates already in the Calicut Regional Engineering College Service.

Any of the qualifications fixed in respect of the above posts can be relaxed by the Selection Committee in case of exceptionally qualified and meritorious persons.

Higher starting pay is admissible in deserving cases. Candidates attending interview will be paid single second class to and fro railway fare or bus fare by the shortest route.

Any candidate applying for more than one post shall send separate application for each post.

The college does not guarantee that all the applicants would be invited to be interviewed for selection to the respective posts advertised. The screening Committee of the Board of Governors has power and authority to decide on the applicant to be called for interview after reviewing the individual merit or otherwise of the applicants based upon their respective applications and the Committee's decision is beyond challenge by the applicants. The College also reserves the right not to fill up any or all the posts advertised, without assigning any reason therefor.

Application form can be had from the Registrar, Regional Engineering College, Calicut, Kérala PIN: 673601 on requisition accompanied by a self addressed and 70 paise stamped envelope (25 cm× 10cm) together with a crossed postal order for Rs. 2/- in his favour. Name of the post for which application is intended shall be specified in the requisition.

Attested copies of certificates showing qualifications, age and experience should be sent along with the application in the prescribed form, together with a Registration fee of Rs. 10/- in the form of crossed Indian Postal Order drawn in favour of the Registrar, Regional Engineering College, Calicut.

Candidates in service shall submit their applications through proper channel or shall produce "No Objection Certificate" at the time of interview.

Completed applications should reach the Registrar at the address shown above on or before **15-2-1985.**

Incomplete/late applications and applications without the requisite registration fee will not be considered.

PRINCIPAL & SECRETARY

UNIVERSITY OF DELHI

DELHI-110007

Advt. No. Estab. IV/96/85 **Dated : the 8th January, 1985**

Applications on prescribed form are invited for the following posts:—

Department		Designation
1. Philosophy		One Reader (Aesthetics or Western Philosophy) (For South Delhi Campus)
2. Sanskrit		One Professor
3. Hindi		One Reader (Specialization : Drama and Stage Craft)
4. Modern European Languages		One Reader—Italian
5. Linguistics	(i)	One Reader
	(ii)	One Lecturer
6. Chemistry		Two Lecturers (One each in Organic and Inorganic Chemistry)
7. Zoology		Two Professors
8. Bio-Chemistry		One Reader (South Delhi Campus)
9. Bio-Physics	(i)	One Professor (South Delhi Campus)
	(ii)	One Lecturer (South Delhi Campus)
10. Microbiology		One Reader (South Delhi Campus)
11. Electronic Science	(i)	Four Readers (South Delhi Campus)
	(ii)	Two Lecturers (South Delhi Campus)
12. Commerce		One Reader
13. Chinese & Japanese Studies		Four Research Associates (Three in Chinese Studies and One in Japanese Studies).
14. Music & Fine Arts	(i)	Seven Lecturers (Four in Hindustani Music (Vocal) and Three in Hindustani Music (Instrumental-Sitar).
	(ii)	One Musician (Karnatak Music)
15. Physics & Astrophysics		*One Laboratory Attendant (Reserved for Scheduled Tribe)
16. Anthropology	@	*One Laboratory Attendant (Reserved for Scheduled Caste)
17. Botany		*One Technical Assistant (Reserved for Scheduled Tribe)
18. Geology		* One Museum Curator
19. Operational Research	(i)	*One Junior Lab. Assistant
	(ii)	*One Laboratory Attendant
20. Education		*One Audio-Visual Assistant
21. W.U.S. Health Centre	(i)	*One Lab. Technician (Part-time)
	@ (ii)	*One Nurse (Reserved for Scheduled Tribe)
22. University Services & Instrumentation Centre	@ (i)	Three Senor Technical Assistants Electronics) (One each reserved for Scheduled Caste and Scheduled Tribe)
	(ii)	*One Technician 'B' (Class Blowing)
	(iii)	*One Junior Technical Assistant (for NMR-Operation)
	(iv)	*One Technician 'C' (Automobiles)
	v)	*One Technician 'B' (Automobiles)
	(vi)	*One Attendant (Automobiles)

@ Candidates of General Category may also apply. However, their candidature would be considered only if no candidate from the Reserved Category is found suitable.

Scales of Pay of the Posts are:

Professor : Rs. 1500-60-1800-00-2000-125/2-2500.

Reader : Rs. 1200-50-1300-60-1900.
Lecturers : Rs. 700-40-1100-50-1600.
Musician : Rs. 700-40-1100-50-1300

Research Associates:

A-Rs. 1400/-P.M.
B-Rs. 1600/-P.M.
C-Rs. 1800/-P.M.
D-Rs. 2000/-P.M.
On the recommendation of the Selection Committee.

Senior Technical Assistant (Electronics) Rs. 550-25-750-EB-30-900.

Museum Curator/Technical Assistant/Jr. Technical Assistant (NMR-Operation) Rs. 425-15-500-EB-15-560-20-700.

Nurse : Rs. 425-15-560-EB-20-640

Technician 'C' (Automobiles) : Rs. 380-12-500-EB-15-560.

Audio Visual Assistant : Rs 330-8-370-10-400-EB-10-480.

Technician 'B' (Glass Blowing/Automobiles) : Rs. 320-8-400-10-450.

Junior Lab. Assistant : Rs. 260-8-300-EB-8-340-EB-10-380-EB-10-430.

Lab. Attendant/Attendant (Automobiles) Rs. 210-4-250-EB-5-270.

Lab. Technician (Part-time) : Rs. 300/- p.m. (Fixed).

All posts, except that of Research Associates and Part-time Lab. Technician, carry D.A., C.C.A. and H.R.A. as admissible under the rules in force in the University from time to time.

A Research Associate once appointed to a particular point will get an annual increment of Rs. 100/- p.m. subject to the total emoluments including increments not exceeding Rs. 2,000/- per month. The value of contingency will be Rs. 5,000/- per annum.

Essential Qualifications for

Professorships

An eminent scholar with published work of high quality actively engaged in research. Ten years' experience of teaching and/or research. Experience of guiding research at doctoral level.

OR

An outstanding scholar with established reputation who has made significant contribution to knowledge.

Readerships : (Other than in Electronic Science)

Good academic record with at least second class master's degree in a relevant subject with a doctoral degree or equivalent published work. Evidence of being actively engaged in (i) research, or (ii) innovation in teaching methods or (iii) production of teaching materials.

Five years' experience of teaching in under-graduate/post graduate classes and/or post-doctoral research work with evidence of published work.

Readership—Electronic Science

Good academic record with at least second class Master's degree in Physics or Electronic Engineering with a doctoral degree or equivalent published work. Evidence of being actively engaged in (i) Research or (ii) innovation in teaching methods or (iii) production of teaching materials.

Five years' experience of teaching in under-graduate, post-graduate classes and/or post-doctoral research work with evidence of published work in the field of Microwave/Computer/Semi conductor Electronics.

Note : Second Class would mean at least 50% marks in the subject or equivalent grade.

Lecturers (Other than Music & Electronic Science)

(a) A Doctorate's degree or research work of an equally high standard; and

(b) Good academic record with atleast second class (C in the seven point scale) Master's degree in a relevant subject from an Indian University or an equivalent degree from a foreign University.

Having regard to the need for developing interdisciplinary programmes, the degree in (a) and (b) above may be in relevant subjects.

Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may relax the requirement of at least second class in Master's degree examination in terms of level achieved at the said examination as prescribed in (b) above.

Provided further that if a candidate possessing a Doctor's degree or equivalent research work is not available or is not considered suitable, a person possessing a good academic record, (weightage being given to M.Phil. or equivalent degree or research work of quality) may be appointed on the condition that he will have to obtain a Doctor's/M.Phil. degree or give evidence of research of high standard within eight years of his appointment, failing which he will not be able to earn future increments until he fulfils these requirements.

Lectureship in Electronic Science

(a) A Doctorate's degree or research work of an equally high standard in Physics or Electronic Engineering, and

(b) Good academic record with at least second class (C in the seven point scale) Master's degree in Physics or Electronic Engineering from an Indian University or an equivalent degree from a foreign University. Having regard to the need for developing interdisciplinary programmes the degrees in (a) and (b) above be in relevant subjects.

Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may relax the requirement of at least Second Class in Master's degree examination in terms of level achieved at the said examination as prescribed in (b) above.

Provided further that if a candidate possessing a Doctor's degree or equivalent research work is not available or is not considered suitable, a person possessing a good academic record, (weightage being given to M.Phil. or equivalent degree or research work of quality) may be appointed on the condition that he will have to obtain a Doctor's/M.Phil. degree or give evidence of research of high standard within eight years of his appointment, failing which he will not be able to earn future increments until he fulfils these requirements.

Explanation

1. For determining "good academic record" the following criteria shall be adopted :

(i) A candidate holding a Ph.D./M.Phil. degree should possess at least a second class Master's degree; or

(ii) A candidate without a Ph.D./M.Phil. degree should possess a high second class Master's degree and second class in the Bachelor's degree; or

(iii) A candidate not possessing Ph.D./M.Phil. degree but possessing second class Master's degree should have obtained first class in the Bachelor's degree.

2. Persons having secured atleast 55% or more marks shall be deemed to have passed the examination in the high second class.

Lecturership in Music

(a) Good academic record with at least second class (C in the seven point scale) Master's degree in a relevant subject or an equivalent degree or diploma recognised by the University; and

(b) Two years research or professional experience or evidence of creative work and achievement in his field of specialization or a combined research and professional experience of three years in the field as an artist of outstanding talent.

OR

A traditional or a professional artist with highly commendable professional achievement in the subject concerned.

Musician

(i) Established reputation as a performing musician with ability to demonstrate different forms of classical and light classical Music.

(ii) Knowledge of theory of practice with ability to explain the techniques of practical art.

(iii) A degree in Music desirable.

Research Associate in Chinese Studies

Consistently good academic record with first or high second class (b+) Master's degree or an equivalent degree of a foreign University in Social Science/ Chinese Language.

Research Associate in Japanese Studies

Consistently good academic record with first or high second class (b+) Master's degree or an equivalent degree of a foreign University in Social Science/Japanese Language.

Senior Technical Assistant (Electronics)

Second Class Graduate Degree in Engineering (Electronics).

OR

Diploma in Electronics Engineering with 5 years experience in repair-maintenance of laboratory and research instruments (candidates will be tested for their aptitude in instrumentation).)

Technician 'B' (Glass Blowing)

Matric with two years experience in Glass Blowing workshop. The candidate should have handled various glass blowing equipments.

Junior Technical Assistant (For N.M.R.-Operation).

At least IInd class M.Sc. (Chem.) having understanding of NMR.

Technician 'C' : (Automobiles)

Should be able to read and write, and should have atleast 15 years experience of repairing of Motor Van, Matador, Jeeps, Cars and Three Wheeler Scooters.

Technician 'B' (Automobiles)

Should be able to write and read and should have atleast 8 years experience of repairing of jeeps, and Cars, Three Wheelers and Motor Cycles.

Attendant (Automobile)

Should be able to read and write and should know about the working tools of Automobiles workshop. Atleast one year experience of being associated with some reliable automobile workshop.

Museum Curator

Graduate in Science with Geology as one of the subjects.

Lab. Technician (Part-time)

(i) High School/Intermediate

(ii) Certificate/Diploma of Lab. Technician's course from a recognised Institution.

(iii) 10 years experience in Microbiology work.

Nurse

Diploma in Nursing from a recognised University or institution and registered as 'A' Grade Nurse.

Technical Assistant—Botany

Graduate in Science. Experience in Lab. Techniques of the subject (Botany).

Junior Lab. Assistant

Matriculation or equivalent examination with Science subject and five years experience as Laboratory Attendant.

OR

Graduation with operational Research or an allied subject as one of the options.

Audio Visual Assistant

1. Matriculation.
2. Licence Certificate to operate Cinematography equipment in Delhi Cinematography Rules.

Laboratory Attendant (Anthropology/Operational Research/Physics).

Should have passed the matriculation or an equivalent examination with Science subjects.

Special/Desirable Qualifications
Readership in Linguistics

Special : Specialization in theoretical Linguistics (with special interest in Transformational—Generative Syntax and Semantics) or in applied Linguistics.

Desirable : Research in Generative Morphology.

Lectureship in Linguistics

Special : Sound background in General Linguistics.

Desirable : Theoretical Linguistics.

Lectureship in Inorganic Chemistry

The candidates should be conversant with modern aspects of the subject.

Lectureship in Organic Chemistry

Reaction mechanism, synthetic organic chemistry bio-synthesis, bio-organic chemistry/chemistry of natural products/physical organic chemistry.

Professorship in Zoology

Specialization in any of the following areas:—

1. Endocrinology
2. Fisheries Biology
3. Developmental Biology
4. Neurobiology
5. Genetics
6. Ecology

Professorship in Bio-Physics

Theoretical and/or experimental and experience for at least ten years on bio-physics of self organising systems and biological phenomena as evidenced by publications and academic recognition.

Lectureship in Bio-Physics

Theoretical and/or experimental and experience for atleast two years on bio-physics of self organising systems and biological phenomena as evidenced by publications and academic recognition.

Lectureship in Electronics Science

Research experience in the field of Computer/Microwave / Semi-conductor Electronics.

Readership in Commerce

Specialization in Marketing/Public Finance/Organisation Theory

Research Associate in Chinese Studies

Knowledge of Chinese Language.

Research Associate in Japanese Studies

Knowledge of Japanese Language (Two years Diploma in Japanese language of the University of Delhi or an equivalent course).

UNIVERSITY GRANTS COMMISSION

ADVERTISEMENT

FRENCH GOVERNMENT SCHOLARSHIPS FOR HIGHER STUDIES IN FRANCE IN FRENCH LANGUAGE, LITERATURE AND CIVILISATION—1985

Applications are invited from Indian nationals holding M.A. degree in French for the above scholarships for the following programmes.

CATEGORY A : For a French Ph.D. (Doctorate) in French University; duration of studies 4 years.

CATEGORY B : For a Diploma or Degree for teaching French as a foreign language; duration of studies one year.

CATEGORY C : Those registered for Ph.D. in French with an Indian University and desiring to collect research material; duration of studies one year.

CATEGORY D : For a Diploma in Translation and/or Interpretation; duration of studies upto 2 years.

For further details of the programme, the Centre for Development of French Studies in India, Office of the Cultural Counsellor, K-76, Hauz Khas, New Delhi may please be contacted if required.

The application forms may be obtained from the Secretary, University Grants Commission (IC.2 Section), Bahadurshah Zafar Marg, New Delhi-110002 by sending self-addressed envelope of the size of 23cm× 10cm upto 31st January, 1985. The last date for the receipt of applications in the Commission's Office duly completed is **20th February, 1985.**

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Lectureship in Music

1. Atleast four years teaching experience in a University.
2. Competency in performance of traditional ragas and forms.

Laboratory Attendant (Anthropology/Physics)

Should have worked in a Laboratory.

Museum Curator : Geology

Preference will be given to post-graduates in Geology.

Audio Visual Assistant

Some training in the use of Audio-Visual equipment.

Nurse

Two years experience in a recognised hospital.

Junior Technical Assistant (For NMR—Operation)

Some experience in Operation of NMR—Spectrometer.

The prescribed application forms can be had from the Information Section of the University either personally or by sending a self-addressed envelope (size 13cm x 28cm) with postage stamps worth Rs. 3.45 P.

The candidates will have to produce the original documents relating to their age, qualifications, experience etc. at the time of interview.

Applications (separate for each post) accompanied by attested copies of Degrees, other certificates, mark sheets, published research articles, etc. should be addressed to the Registrar. However, applications for the posts marked asterisk (*) should be sent directly to the Head of the Department concerned. The last date prescribed for receipt of the applications is **9-2-1985.**

Note :

1. It will be open to the University to consider the names of suitable candidates for teaching posts who may not have applied. Relaxation of any of the qualifications may be made in exceptional cases, in respect of all the posts on the recommendations of the Selection Committee.
2. Canvassing in any form by or on behalf of the candidates will disqualify.
3. Candidates for teaching posts only from outside Delhi, when called for interview will be paid to and fro single second class rail fare.
4. The University reserves the right not to fill up any of the vacancies advertised if the circumstances so warrant.

Madan Mohan
REGISTRAR

Indian Institute of Technology

Sponsored Research & Industrial Consultancy Centre

KHARAGPUR

ADVERTISEMENT NO. R/SRICC/3/PROJECT/84

APPLICATIONS ARE INVITED FROM INDIAN NATIONALS FOR THE UNDERMENTIONED POSTS IN DIFFERENT SPONSORED RESEARCH PREJECTS TENABLE AT THE INDIAN INSTITUTE OF TECHNOLOGY, KHARAGPUR. THE POSTS ARE PURELY TEMPORARY AND WILL CONTINUE FOR THE DURATION OF THE PROJECTS.

1. DEPARTMENT : AGRICULTURAL ENGINEERING DEPARTMENT

PROJECT : ALL INDIA CO-ORDINATED RESEARCH PROGRAMME ON WEED CONTROL.

POST : SENIOR RESEARCH OFFICER (AGRONOMY) — ONE POST

PAY : Rs. 1200-1900/-P,M. PLUS D.A. AS PER RULES ETC,

DURATION : UPTO 31-3-1986

QUALIFICATIONS & EXPERIENCE

ESSENTIAL : Good academic record with Masters and Ph.D. degree in Agronomy. Minimum 5 (Five) years research experience in agronomy/weed science.

DESIRABLE : Knowledge of weeds and weed control and modern methods of field experimentation

II. DEPARTMENT : POST HARVEST-TECHNOLOGY CENTRE

PROJECT (1) : HARVEST & POST HARVEST TECHNOLOGY

POST : SENIOR RESEARCH OFFICER—ONE POST

PAY : Rs. 1200-1900/- P,M. PLUS D.A. AS PER RULES ETC,

DURATION : ONE YEAR LIKELY TO CONTINUE IN THE NEXT PLAN PERIOD

QUALIFICATIONS & EXPERIENCE

ESSENTIAL

(i) Good academic record with Bachelors Degree in Agr. Engineering followed by Good Master's Degree in Agr. Engineering with specialisation in Crop Process Engineering or Masters Degree in Post Harvest Technology/Engineering.

(ii) Five years of total experience of teaching, research, design and extension in the area of Post Harvest Technology. Seven years for candidate from relevant Industry.

DESIRABLE

(i) Doctorate Degree in Agr. Engineering/Engineering.

(ii) Knowledge of modern methods of transfer of technology in rice milling.

PROJECT (2) : REGIONAL EXTENSION SERVICE CENTRE

POST : SENIOR RESEARCH OFFICER (EXTENSION)—ONE POST

PAY : Rs. 1200-1900/- P,M. PLUS D,A, AS PER RULES ETC.

DURATION : TILL MARCH 1986,

QUALIFICATIONS & EXPERIENCE
ESSENTIAL

(i) Good academic record with Bachelor's Degree in Agricultural Engineering followed by Good Masters Degree in Agr. Engg. with specialisation in Crop Process Engineering or Masters Degree in Post Harvest Technology/Engineering.

(ii) Five years of total experience of Teaching, Research, design and extension in the area of Post Harvest Technology. Seven years for candidates from relevant Industry.

DESIRABLE

(i) Doctorate in Agr. Engg./Engineering.

(ii) Knowledge of modern methods of transfer of technology in rice milling.

PROJECT (3) : REGIONAL EXTENSION SERVICE CENTRE

POST : JUNIOR ENGINEER (EXTENSION)—ONE POST

PAY : Rs. 700-1600/- P.M. PLUS D.A. AS PER RULES ETC.

DURATION : TILL MARCH 1986.

QUALIFICATIONS & EXPERIENCE

ESSENTIAL

A good academic record with a Masters degree in Agril. Engg. with specialization in Crop Process Engineering/Post Harvest Technology/Post Harvest Engineering.

DESIRABLE

Aptitude for doing extension work in the area of rice milling.

III. DEPARTMENT : RUBBER TECHNOLOGY CENTRE

PROJECT : DEVELOPMENT OF RUBBER COMPONENTS FOR AGRICULTURAL MACHINERY

POST : RESEARCH ASSOCIATE—ONE POST

PAY : Rs. 1300/- P.M. (CONSOLIDATED) FOR FIRST 2 YEARS

Rs. 1500/- P.M. (CONSOLIDATED) FOR THIRD YEAR

DURATION : 3 YEARS

QUALIFICATION & EXPERIENCE

ESSENTIAL

A first class Master degree in Engineering with 3 years research experience or 1st class M.Sc. (Chemistry)—with Ph.D. and at least 3 years research experience in rubber technology/agricultural machinery.

DESIRABLE

Research experience in rubber technology/agricultural machinery.

IV. DEPARTMENT : PHYSICS DEPARTMENT

PROJECT : DEVELOPMENT OF TECHNIQUES FOR THE PRODUCTION SEPARATION AND STORAGE OF SILANES FROM RICE HUSKS FOR PREPARING AMORPHOUS SILICON AND SOLAR GRADE POLYSILICON.

POST : JUNIOR SCIENTIFIC OFFICER—ONE POST

PAY : Rs. 700-1600/- P.M. PLUS D.A. AS PER RULES ETC.

DURATION : UPTO MARCH 1986

QUALIFICATIONS & EXPERIENCE

ESSENTIAL

B. Tech. degree in Chemical Engineering/Electronics Engineering with 2 years experience.

Or

M.Sc. degree in Physics/Chemistry/Materials Science with at least 2 years experience in the field of preparation and characterization of semiconducting materials.

Or

M. Tech degree in the Industrial Physics/Materials Science/Chemical Engineering/Electronic Engg.

DESIRABLE

(i) Experience in preparation & characterization of materials like silicon tetra chloride, silanes, amorphous silicon films.

(ii) Ph.D degree in any of relevant branches.

Applications on plain paper giving complete bio-data in the following proforma and accompanied with attested copies of certificates and a Crossed I.P.O. of Rs. 7.50 P. (Rs. 1.87 P. for SC/ST candidates) payable to Indian Institute of Technology, Kharagpur at Kharagpur-721302 Post Office should reach the Superintendent (SRICC), Indian Institute of Technology, Kharagpur-721302 within 3 (Three) weeks from the date of advertisement.

Second class railway fare by the shortest route will be paid to the candidates for attending the interview.

GUJARAT VIDYAPITH

AHMEDABAD-380014

(Founded by Mahatma Gandhi in 1920)

Shri Jamnalal Bajaj Institute of Studies in Ahimsa (ISA)

(A Research Institute of development studies for emergence of the Non-violent Society)

GENESIS

One of the objectives of the Gujarat Vidyapith, founded by Mahatma Gandhi in the year 1920, enjoins it to work through education for establishment of a society based on truth and non-violence.

Gandhiji devoted his life in the quest of peace and made several experiments in the pursuit of truth and non-violence. Another stipulated objective, embodied by him in the constitution of the Gujarat Vidyapith, states :

> "Teachers and trustees of the Vidyapith shall restrict themselves to those means only which are not inconsistent with truth and non-violence and shall consciously strive to carry them out."

In October 1969, on the occasion of Gandhi Centenary celebrations the Gujarat Vidyapith organised, with the cooperation of the University Grants Commission, Indian National Commission for UNESCO, Council of Scientific & Industrial Research & Atomic Energy Commission, a Seminar on "Science, Education and Non-violence", which was attended by distinguished Scientists and Scholars from U.S.A., U.S.S.R, Canada, Australia and India.

The Seminar felt that a studies & research programme as a follow up of this seminar should be instituted by the Gujarat Vidyapith. This received support from the UNESCO in the form of the library and fellowship grant for starting the Peace Research Centre in the Gujarat Vidyapith, as a first step. The University Grants Commission helped to institute staff in the Centre. With this background, the Peace Research Centre started working from December, 1971. Thus started perhaps the first interdisciplinary department on studies and research in Peace, Peace-Education & Non-violence, as an integral part of the University system.

Second step was taken by instituting late Kamalnayan Bajaj memorial lectures from the annual income of the endowment fund created from an endowment received from Kamalnayan Bajaj Charitable Trust. The running annual theme of the lectures is "Science & Non-violence".

The third step as a follow-up of the 1971 seminar was to develop an institute of studies aimed at promoting the emergence of a non-violent society in the memory of late Shri Jamnalal Bajaj who was associated with the Gujarat Vidyapith at the time of its founding. He actively supported Gandhiji in strengthening the Gujarat Vidyapith. Nothing could be more befitting his memory than to work for Gandhiji's ideas of Ahimsa in its entirety and societal context. The Institute integrates three major programmes of studies in Gandhian Thought, Peace Research and interaction between Science & Ahimsa. Science-Ahimsa Centre (SAC) is named after late Shri Sriman Narayan, a trustee of the Gujarat Vidyapith and a close associate of Gandhiji and Vinobaji. Shri Jamnalal Bajaj Institute is the culmination of the above three concurrent programmes of studies, research and extension in order to bring them in a correlated and integrated frame-work.

PROGRAMMES

1. **Centre for Studies in Gandhian Thought**

    * P.G. Diploma & M.A. Degree (Correspondence Course)
    * M.Phil & Ph.D. Studies
    * Post-doctoral research

2. Peace Research Centre

- M.A. & M.Phil. Courses on Peace and New Global Society
- Seminars
- Monographs

3. Shriman Narayan Centre to Promote Interaction between Science and Ahimsa

- M.Phil. Course on Science & Ahimsa with Applied Research
- Extension Work through Ahimsa Mandals (Ahimsa Clubs)
- Preparation of three-volume Encyclopaedia of Non-violence

THE ADVISORY COMMITTEE

1. Prof. D. S. Kothari (former Chairman of the UGC)
2. Prof. M. S. Swaminathan (former D.G. of I.C.A.R.)
3. Prof. Johan Galtung (Consultant to UN 2nd Disarmament Conference)
4. Dr. Rodrigo Carazo, (President-UN University for Peace)

AHIMSA, THE ATTRIBUTE OF SOUL

"We have to make truth and non-violence, not matters for mere individual practice, but for practice by groups and communities and nations. That at any rate is my dream. I shall live and die in trying to realize it. My faith helps me to discover new truths every day. Ahimsa is the attribute of the Soul, and therefore to be practised by everybody in all affairs of life."

—M. K. Gandhi

Science + Spirituality = Sarvodaya (uplift of all)
Science + Violence = Sarvanash (total destruction)

—Vinoba Bhave

"The most important human endeavour is the striving for morality in our actions. Our inner balance and even our very existence depend on it. Only morality in our actions can give beauty and dignity to life.

To make this a living force and bring it to clear consciousness is perhaps the foremost task of education.

The foundation of morality should not be made dependent on myth nor tied to any authority lest doubt about the myth or about the legitimacy of the authority imperil the foundation of sound judgement and action."

—Albert Einstein

"Most of the grave and vital challenges and problems, we face today—individually, collectively and globally on a scale, and of intensity never known before, have their roots in the imbalance, increasing at a frightening pace, between advancement of Science and Technology on the one hand and the dismal lack generally of concern for the true welfare of mankind on the other hand."

—Dr. D. S. Kothari

"Violence is that which increases the distance between the potential and the actual, and that which impedes the decrease of this distance."

—Johan Galtung

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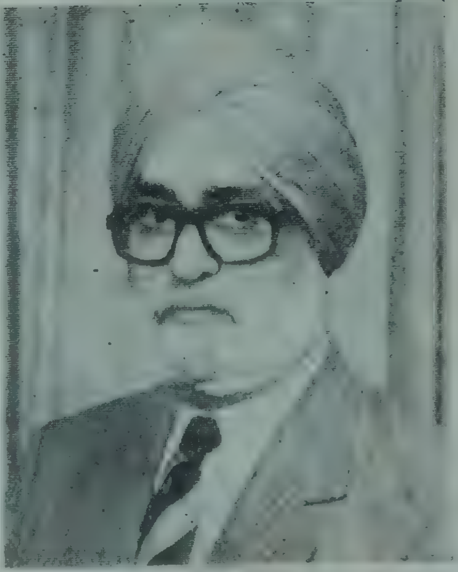
15 FEB 1985
C.F.T.R.I., MYSORE

Prof. C.N.R. Rao, Director, Indian Institute of Science, Bangalore, who has been awarded Padma Vibhushan.

← Prof. Rais Ahmed, Vice-Chairman, UGC, who has been awarded Padma Bhushan.

Prof. Gurbakhsh Singh, Vice-Chancellor, University of Delhi, who has been awarded Padma Bhushan →



CLASSIFIED ADVERTISEMENTS

UNIVERSITY OF NORTH BENGAL

DIST. DARJEELING-734430
F-22/Advt./Estt./3/R-85
Dated : 17-1-85

Applications in prescribed forms are invited for the following posts:

(A) Professor of History—Post one (Specialisation: Archaeology)
(B) Reader in English—Post one.

Pay Scale: (A) Professor : Rs. 1500-2500/- and (B) Reader : Rs. 1200-1900/- respectively with other allowances and benefits as per University Rules.

Qualifications

For Professor and Reader as prescribed by the University Grants Commission. Details of qualifications for Professor and Reader may be obtained with application forms.

The candidates who applied earlier for the post of Reader in English, need not apply again as their cases will be considered.

All the posts are reserved for the candidates belonging to S.C./S.T. provided they fulfil the essential qualifications laid down. If such candidates are not available or not found suitable, posts will be filled up from general categories. Hence non-S.C./S.T. candidates may also apply.

Choice of Selection Committee may not necessarily be confined to those who apply formally. No application except in prescribed application forms may be considered.

Prescribed application forms may be obtained from the office of the Registrar personally on payment of Rs. 5/- (Rs. 3/- for S.C./S.T.) in cash at the University Cash Counter or by sending a self-addressed envelope of 25×13cms. affixed with stamps worth Rs. 1.40 accompanied by crossed I.P.O./Bank Draft of Rs. 5/- (Rs. 3/- for S.C./S.T.) in favour of the University of North Bengal. Filled in application forms (6 copies) along with one self addressed unstamped envelope must reach the office of the Registrar, P.O. North Bengal University, Dist. Darjeeling, Pin : 734430 on or before **16-2-1985.**

REGISTRAR

THE UNIVERSITY OF BURDWAN

RAJBATI : BURDWAN
WEST BENGAL
Advertisement No. 8/84-85
Dated : 18 January, 1985

Applications in the prescribed form are invited for the following posts in the approved scales of pay (viz. Reader-Rs. 1200-50-1300-60-1900/- and Lecturer Rs. 700-40-1100-50-1600/-) plus dearness and other allowances and pensionary benefits according to the Statutes of the University.

A. **Department of Business Administration**
Reader : One post
B. **Department of Business Administration**
Lecturer : One post
C. **Department of English**
Lecturer : One post
D. **Department of Library and Information Science**
Lecturer : One post

Minimum Qualifications
For Readership

Good academic record with a doctoral degree or equivalent published work. Evidence of being actively engaged in (i) research or (ii) innovation in teaching methods or (iii) production of teaching materials

About five years' experience of teaching and/or research provided that at least three of these years were as Lecturer or in an equivalent position.

This condition may be relaxed in the case of candidates with outstanding record of Teaching/Research.

For Lectureship

(a) A Doctorate's Degree or Research Work of an equally high standard; and

(b) Good academic record with at least Second Class (C in the seven point scale) Master's Degree in a relevant subject from an Indian University or an equivalent degree from a foreign University.

Having regard to the need for developing interdisciplinary Programmes, the degrees in (a) and (b) above may be in relevant subjects.

Other Requirements

For the posts of A and B : Familiarity with the latest developments in the field of Business Administration. Applicants having no degree in Business Administration must have some exposure to such curriculum through Teaching, Research, Professional assignments or practical experience.

A. For **Readership**

(1) At least five years' post-graduate teaching experience or equivalent professional experience.

(2) Competence of research work as evidenced by publications.

Desirable Qualifications
Specialisation or Proficiency

For A : Personnel Management.
For B : Personnel Management/Business Laws/Business Policy.
For C : Ancient European Classics in Translation/Ancient Criticism (From Plato to Milton)/Mediaeval English Literature.
For D : Any branch of the subject.

The Executive Council may on the recommendation of the appropriate Selection Committee, waive any of the aforesaid requirements in view of the candidate's specialised knowledge in the subject. The choice of the Committee may not necessarily be confined to those who apply formally. *Higher initial pay may be considered in appropriate cases.*

Those who had applied for the posts of Reader and Lecturer in Business Administration in response to Advertisement No. 4/83-84 dated 28-11-83 and No. 18/83-84 dated 22-5-84 need not apply afresh.

For application forms and other particulars please apply to the Registrar, University of Burdwan, Rajbati, Burdwan with a self-addressed stamped (80 paise) envelope (9"×4").

Last date for submission of application with the requisite fee of Rs. 5/- is **15 February, 1985.**

A.K. Chaudhuri
REGISTRAR

ASSOCIATION OF INDIAN UNIVERSITIES

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Opinions expressed in the articles and reviews are individuals and do not necessarily reflect the policies of the Association

Editor :
M.S. RAMAMURTHY

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15 FEB 1985
C.F.T.R.I., MYSORE

Republic Day Honours-1985

This year's Republic Day Honours list includes a number of people from the fields of Education, Science & Technology and Medicine. University News joins millions in conveying its hearty congratulations to each one of them for the honour conferred which they richly deserve. Given below are names of some who figure in the list :

Padma Vibhushan

(1) Prof. C.N.R. Rao, Director, Indian Institute of Science, Bangalore; (2) Prof. M.G.K. Menon, Member Planning Commission, New Delhi.

Padma Bhushan

(1) Prof. Rais Ahmed, Vice-Chairman, University Grants Commission, New Delhi; (2) Prof. Gurbakhsh Singh, Vice-Chancellor, University of Delhi; (3) Dr. S. Vardarajan, Director-General, Council of Scientific & Industrial Research, New Delhi; (4) Prof. B.M. Udgaonkar, Tata Institute of Fundamental Research, Bombay; (5) Prof. Virendra Lal Chopra, Indian Agricultural Research Institute, New Delhi; (6) Dr. Amarjit Singh, Director, Central Electronics Engineering Research Institute, Pilani; (7) Prof. E.V. Chitnis, Director, Space Applications Centre, Ahmedabad.

Padma Shri

(1) Dr. M.S. Valiathan, Director & Professor of Cardiothoracic Surgery, Sree Chitra Tirumal Institute for Medical Sciences & Technology, Trivandrum; (2) Dr. S.S. Sriramacharyulu, Additional Director-General, Indian Council of Medical Research, New Delhi; (3) Dr. Madan Mohan, Professor of Ophthalmology, All India Institute of Medical Sciences, New Delhi; (4) Dr. Samiran Nandi, Surgeon, All India Institute of Medical Sciences, New Delhi; (5) Dr. R.K. Gandhi, Paediatric Surgeon, Seth G.S. Medical College, Bombay; (6) Dr. S.R. Mehta, Principal, S.M.S. Medical College, Jaipur.

In the field of Sports, Miss P.T. Usha, Athlete (400M Hurdles) gets Padma Shri. She had represented Calicut University in 1981-82.

Higher Education and Five Year Plans

Policies, Plans and Perspectives

S. N. Saraf*

Text of the paper presented at the Fifteenth Seminar on Management of Education Systems for University and College Administrators held at the Administrative Staff College of India, Hyderabad in October, 1984.

The first two parts of the paper were published in the last two issues. The third and concluding part appears below.

As a result of the investments made in several Five Year Plans for various developmental projects under higher education, there has been phenomenal growth in institutions and enrolment. This is presented in Table No. 2.

Table No. 2

Growth in Institutions and Enrolment 1951-83

(Universities and Colleges)

S. No.	Year	Universities	Colleges	Enrolment
1	2	3	4	5
1.	1950-51	27	695	396,745
2.	1960-61	45	1542	1,034,934
3.	1970-71	105	3604	3,112,404
4.	1974-75	111	4170	2,366,541
5.	1980-81	123	4722	2,752,437
6.	1982-83	133	5012	3,136,986

Of the 133 Universities, 18 provide education in agricultural and veterinary sciences, 5 in technical and agricultural sciences and 3 in purely technological subjects and the rest provide education in all the areas including professional disciplines. There are seven Central Universities established by the Acts of Parliament. Among the 5012 colleges, 1205 i.e., 24 per cent provide education in professional disciplines like technical, agriculture, medical, architecture etc. About 76 per cent are privately managed colleges. Excepting about a dozen autonomous colleges, the rest are affiliated to universities for academic and degrees awarding purposes.

The institutional and enrolment growth during the last 32 years (even after excluding Intermediate Colleges, Junior Colleges etc. and their respective enrolment after 1974-75) has been almost fantastic. What is, however, disturbing is that the pattern of distribution of student enrolment has hardly changed over these years; arts courses have, more or less, continued to dominate the higher education scene; they represented about 46 per cent in 1950-51, 41 per cent in 1970-71 and about 40 per cent in 1982-83. The proportion of enrolment in science courses in 1950-51 was 32 per cent dipped to 19 per cent in 1978-79 and has almost stabilised at about 20 per cent in 1982-83. The loss of science courses has been the gain of commerce courses; the proportion of commerce course enrolment rose steadily from about 9 per cent in 1950-51 to 17 per cent in 1981-82 and is estimated to be 15 per cent in 1982-83.

There has been spectacular growth in the number of women students in institutions of higher learning. Their numbers grew from 40,000 in 1950-51 to 893,000 in 1982-83 and the number of women students per hundred men has increased from 14 to 40 during this period. The enrolment of women has gone up by more than twenty times while the proportion of women to men has increased about three-fold during this period. The overall percentage of women to total enrolment has also been increasing; it was 22.7 in 1971-72 and 28.5 in 1982-83. There are, of course, variations in various faculties; highest being in the faculty of education where it was 56.3 per cent

Higher education undoubtedly has been instrumental in economic growth. There are thousands of doctors, engineers, scientists, technicians and other personnel of higher competance managing our industry, commerce, agriculture, services and major agencies of applied research. Since the sixties dependence on foreign higher education has been minimal for almost any branch of learning. A more spectacular demonstration of the strength of this infrastructure has been witnessed in the fields of agriculture, science and technology, energy and space. About 150,000 qualified scientific and technical personnel are produced every year. The total stock of scientific and technically qualified manpower is estimated at 2.5 million, ranking India as the third largest complement of such manpower in the world, occupying an unique position among developing countries. From this point of view investment in higher education has yielded considerable dividends. In recent years, there have been some efforts to regulate the growth of higher education as well as the establishment of new universities and colleges. The growth of student enrolment, which was over 11 per cent per annum in the sixties came down to about 3.8 per cent in the seventies. Efforts were also made to equip the

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**Visiting Consultant, National Institute of Educational Planning and Administration, New Delhi.*

The opinions expressed in this paper are personal views of the author. These do not, in any way, reflect the views and policies of the National Institute of Educational Planning and Administration.

universities and colleges with a modicum of facilities. Attempts have been made to implement a new development strategy which would progressively reduce the existing imbalance in the development of higher education, to ensure essential facilities like books and equipment in a majority of colleges and to redesigning of undergraduate courses etc.

There are, however, a few problem areas which seem to have become perennial where policy perspectives require new and vigorous initiatives:

Problem Areas : Tremendous expansion has been one of the most prominent features of our university education (general) system by a factor of almost 15 in a span of 34 years. This unparalleled expansion in the history of any country has many facets. Though it is in response to the spontaneous urge of the people to overcome the lag of centuries in a few decades; its unplanned expansion has, among other things, led to a multiplicity of problems; concentration in arts courses, overproduction and unemployment among educated persons, degree as a passport to employment, examination and not learning as the end of education, stereo-typed first degree courses without relevance to the requirements of students and society, perceptible imbalances in the development of higher education at the regional and sub-regional levels, and as between rural and urban areas, inadequate facilities for socially disadvantaged sectors of the community, increasing unrest and student indiscipline, staff discontentment, poor institutional facilities, constraint of financial resources, non-viable institutions, collapse of administration and above all, the demoralising effect of the irrelevance and purposelessness of most of what is being done. Apportioning blame to different agencies for various inadequacies, which have emerged, would be an intractable and futile exercise and perhaps not necessary. One action leads to another action and there is a chain reaction. Problem identification and programme solution is the need of hour.

A few areas of reform have now emerged very distinctly which must figure prominently in the national agenda of university education development in the years to come. Some of the important facets of this perspective are being mentioned very briefly. The list is not exhaustive, neither the explanation comprehensive. The intention is only to highlight the highlights.

Restructuring of Courses : This single reform, if implemented with all seriousness it deserves, can provide solution to many vexing problems.

Extension Activities : Involvement of universities in college development and colleges in school development and the active participation of the total higher educational system in the off-campus community and integrated rural development will directly contribute to national development and bring the classes and masses nearer. The Sixth Plan has stated that "such extension work would be considered as part of the normal academic work of the students, and not as social service."

Autonomous Colleges : Policies developed at macro levels do not have much chance of a success if the institutions at the micro levels have not the freedom and resources to convert policies into operational programmes. Introducing reforms in a serious manner, implies a greater measure of decentralisation of the administrative and academic processes in the universities. For this purpose the concept of autonomous colleges has now to become a reality and the number of such colleges should increase through the provision of adequate resources and developing suitable administrative strategies.

Open-Learning Programmes : Inspite of several policy decisions which have been taken and may continue to be reiterated from time to time to restrict admission to colleges and universities, demand for higher education will continue to rise because of the pressure of sheer numbers pursuing and completing elementary and higher education. Even if there is a massive programme of vocationalization at the +2 stage, of which hopes are very dim excepting in a few isolated pockets, the numbers pursuing education will tend to increase. It will not be a rude shock if it is found that 15 years hence, the enrolment at the university stage will double. There are very remote chances of enough financial resources becoming available even for improving the existing institution and nothing will be left for further expansion. The objectives of ensuring greater access to higher education and fulfilling the rising social expectations will have to be met perforce through various alternative systems of well-designed, efficient, relevant and acceptable open-learning programmes.

Delinking of Degrees from Jobs : This major innovative reform of delinking of degrees from jobs which would have direct and immediate impact on the quantitative growth and qualitative development of higher education, was recommended even in the First Plan which was formulated in 1951. Recruitment to jobs needs to be delinked from a degree qualification wherever possible. This is one of the core issues of the continuing crisis of higher education and no time be lost to pursue it seriously in all its ramifications.

Education in Human Values : A balance is to be struck, as early as possible, between science and spirituality, machine and man, materialism and ethics to save humanity from complete disaster. It is all the more important because educational institutions have an important role to play and can, in a significant measure, provide the bridge between the two extremes. Right from the Report of the University Education Commission (1948-49), which was available before the formulation of the First Plan, this aspect of higher education has been talked about and talked out but hardly anything concrete done and practically achieved. This require serious consideration and formulation of functional programmes on a priority basis.

Post-graduate Education and Research : It is in this area, if the quality of education is to be improved and standards have to be raised, that selectivity in admissions and restriction of numbers on the basis of available facilities, is to be vigorously followed.

Linkages between Higher Education, Employment and Economic Development : Though recommended in earlier Plan documents, the need for developing effective and mutually beneficial linkages between higher education, employment and economic development have been clearly stated in the Sixth Plan document. It would be sad if the linkages are not clearly defined and operational programmes visualized which would end the splendid isolation of higher education from employment in particular and economic development in general. Some universities, should, in the first instance, be encouraged to take up this pioneering work at the micro levels and the experience widely disseminated. Even if some amendment in the acts of the selected pioneering institutions is required, it should be gone through.

Mobilisation of Resources : If the present trend of constraint of resources for education continues, inspite of the weighty arguments which may be advanced, at various levels, in favour of according highest priority to human resource development, the expectations are that adequate finances required for various kinds of expansion and qualitative programmes may not be forthcoming. This realization has to dawn earlier. The level of subsidy for sectors other than elementary, adult and technical education will need to be considerably reduced. Each higher educational institution and university will have to draw up its own plan with accent on optimum utilisation of existing resources of men, money and materials weeding out of irrelevant programmes with low priority, mobilisation of resources through developmental funds to be raised from beneficiaries, drawing upon the facilities of various developmental agencies in the area, avoiding duplication of courses/programmes which are already available in the neighbouring institutions etc. The existing distribution of expenditure on revenue account incurred by Education Department indicates that University Education got Rs 648 crores in 1982-83 out of Rs 4315 crores both in the Plan and non-plan budgets. It formed 15 per cent of the total budget on Education. It may increase slightly but not materially especially when the priorities are now tilted more in favour of elementary and adult education and it is also observed that there is no improvement in percentage of allocation to Education Budget to the total Government Budget during the last decade.

Notwithstanding a number of critical areas identified by several experts and observed daily, the above is, so to say, a short-listing of important action points in the area of University Education which should be concentrated upon and require intensive thought and action. These have been repeated in many Plan Documents. However, the centre-piece of the educational reform at all levels and particularly at the higher education stage is the teacher and the administrator who stand out as the highly educated persons in the community endowed with potential for creative idealism. Their role in policy planning and programme management needs to be adequately emphasised. Nearly 2.15 lakh highly talented teachers in institutions of higher learning and hundreds of educational administrators, if mobilised for qualitative improvement of University Education, can make a tremendous impact which cannot be measured in monetary terms. This major non-monetary input with vast resources and immeasurable potential which has receded in the background, has to be tapped. Under the present grim circumstances, there is no other alternative. This calls for the orientation of teachers, administrators as well as students to the emerging tasks and direct involvement in finding solutions within the current and preferred societal and economic milieu and constraints. **[Concluded]**

Nagpur University Celebrates Diamond Jubilee

On completion of 60 years of its existence and its academic service to the community, the Nagpur University has decided to celebrate its Diamond Jubilee in the year 1984-85 in a manner befitting its name and tradition. The Hon'ble President of India, Giani Zail Singh will be the Chief Guest and will preside over the inaugural function to be held on 8th February, 1985. It is also decided to hold a Special Convocation, as a part of the celebrations, to confer the Degree of Doctor of Laws (LL.D., Honoris Causa) on Shri Justice M. Hidayatullah, former Vice-President of India, who is one of the most illustrious alumni of this University.

The venue of the function is arranged on the University Play-fields near Law College premises. This function will be widely attended by the dignitaries of this area. This function will last for two days. On 8th there will be formal inauguration at the hands of the President of India and conferment of Degree of Doctor of Laws (LL.D., Honoris Causa) on Shri Justice M. Hidayatullah at a Special Convocation to be followed by entertainment programme in the evening, On 9th February, there will be University's Past Students' Convention for which Shri P.V. Narasimha Rao, Minister for Defence, Government of India, will be the Chief Guest and Shri V.P. Sathe, Minister for Steel, Mines and Coal, Govt. of India, will be the president. There will be a presentation of Best Student Award Trophy to the best student. On this occasion it has been decided to undertake number of activities in several frontier and newly emergent areas.

A souvenir will also be published which will contain articles and reminiscences from the distinguished persons associated with the University.

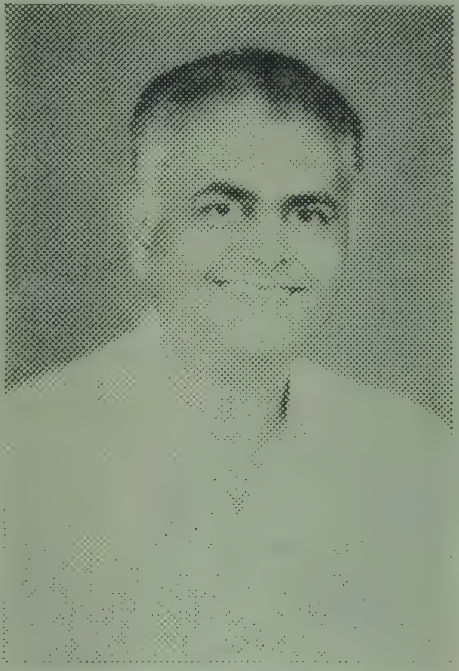
Our New Union Education Minister

Shri Krishna Chandra Pant

Shri K.C. Pant was born at Bhowali, Nainital District, Uttar Pradesh on August 10, 1931. Son of BHARAT RATNA late Pandit Govind Ballabh Pant (1887-1961), Chief Minister of Uttar Pradesh from 1937-1939, 1945-1954 and then Home Minister of India from 1954 to 1961, Shri K.C. Pant received his primary education at Nainital and did his Senior Cambridge from St. Joseph's College, Nainital. He did his M.Sc. in Chemistry from Lucknow University in 1954 and was the recipient of the Chancellor's Gold-Medal for being the best all-round student of the year. He was the President of the Chemistry Department of the University. He went to the U.S.S.R. in 1954 as a Member of a Students' delegation. He went to West Germany for two years course in Chemical Technology and engaged himself in Industry and consultancy work. He was married to Smt. Ila Pant on 20th June, 1957. Udaipur University, Rajasthan, awarded an Hony. Doctorate Degree to him in 1975-76.

He won the General Election of 1962 to the Parliament from Nainital (U.P.). In 1962 he was elected to the Executive Committee of the Congress Parliamentary Party. He remained its Member till 1967. In 1966, he was elected General Secretary of the Congress Party in Parliament and was called upon to organise the Leadership election between Smt. Indira Gandhi and Shri Morarji Desai after the demise of Shri Lal Bahadur Shastri.

He was the Indian Delegate to Human Rights Commission, 1965 and its first Vice-Chairman in 1966. He was also a Member of (i) Administrative Reforms Commission Study Team on Government Machinery; (ii) Institute for Defence Studies and Analysis upto 1977; (iii) Executive Council of the Nehru Institute of Mountaineering; (iv) Committee on Public Undertaking; (v) Founder Member, Institute of Constitutional & Parliamentary Studies; and (vi) Vice-President, Indian Council for Africa. He attended the Seminar on Nuclear Weapons in Toronto in 1966. He was Parliamentary Adviser to the Indian Delegation and Member of the Third Committee of the U.N. in 1965 and Leader of the U.N. Delegation after the return of the Foreign Minister to India. He led the Delegation to the Colombo-Plan Consultative Committee Meetings, held in Rangoon in December, 1967 and again in Seoul (Korea) in October, 1969. He was Co-Chairman, Indo-Polish Commission, 1976.



Shri K. C. Pant

He was Member of the Third, Fourth & Fifth Lok Sabha (Parliament) from 1962 to 1977. He served as Minister (Govt. of India) in the Ministry of (i) Finance, March 1967 to Feb., 1969; (ii) Steel & Heavy Engineering, Feb., 1969 to June 1970; (iii) Home Ministry (Interior Affairs) and Department of Electronics, Atomic Energy, Science & Technology, June 1970 to May, 1971; (iv) Home Affairs and assisted the Prime Minister in Parliamentary work relating to Departments of Atomic Energy, Electronics & Space from May, 1971 to November, 1973; (v) Irrigation & Power from Nov., 1973 to October, 1975 and (vi) Energy from October, 1975 to March, 1977. He continued to assist the Prime Minister as before in the Departments of Atomic Energy, Electronics and Space from November, 1973 to March, 1977. He was elected to the Working Committee of the All India Congress Committee in May, 1977 and became General Secretary of All India Congress Committee.

He was elected to the Parliament (Rajya Sabha) in March, 1978, for a six years term ending March, 1984. He served as the Cabinet Minister for Energy from July, 1979 to January, 1980 and was also the Leader of the Parliament (Rajya Sabha).

He is a Member of the Executive Council of the Nehru Institute of Mountaineering since November, 1982. He is a Member of the National Integration Council under the Prime Minister's Chairmanship. He was the Chairman of the Advisory Board on Energy from March, 1983, upto 19th November, 1984. The Board was reporting directly to the Prime Minister. He led the Indian Delegation to Human Rights Commission, 1984, at Geneva.

Inducted in the Cabinet as Minister of Education on 31st December, 1984.

Shri Pant is widely travelled. He has visited U.S.A., U.S.S.R., U.K., Africa, Austria, Germany, Canada, South-Korea, Burma, Nepal, France, Egypt, Italy, Japan, Iran, Yugoslavia and other Western European Countries. His special interest is Welfare work. He is associated with a number of educational Institutions. He is an Hony. Life Member of the Institution of Engineers. He has been a keen sportsman and is a member of the Delhi Gymkhana Club. He has been the Captain of the Parliament Cricket Team.

Prof. Gore Addresses Convocation of Jadavpur University

Text of the Convocation Address delivered by Prof. M. S. Gore, Vice-Chancellor, University of Bombay & President, AIU at the Jadavpur University, Calcutta on December 31, 1984.

Convocation

"I have chosen to speak today about one of the problems facing our system of higher education—the problem of the large and ever increasing number of students in our colleges and universities. It may seem odd that a teacher should consider an increasing number of students to be a problem. Obviously, it is not the numbers that are the problem but our infrastructural inability to cope with them.

Let us look at some of the numerical descriptive aspects of this problem. According to the data published by the U.G.C. at the time of the Conference of Vice-Chancellors held in May 1984, the number of students enrolled in all the universities—including 'deemed' universities had increased from 1.7 lakhs to 31.4 lakhs—an eighteen fold increase between 1950-51 to 1982-83. During the same period the number of universities—in which these students were enrolled—increased from 28 to 120 i.e. four fold. If we take the 13 newly created 'deemed' universities into account, the increase was approximately five-fold. But the enrolment in the 'deemed' universities is low since many of them are post-graduate and specialized institutions. The major increase in student enrolment is in the statutory universities and their affiliated colleges. The number of colleges increased from 695 to 5039 i.e. seven-fold. The total number of teachers in all these colleges and universities increased ten-fold—from 21,264 to 2,11,751.

It is obvious from the above figures that while the total number of students increased by a multiple of eighteen the institutional infrastructure to meet the educational needs of these students did not increase proportionately. It is possible to argue that in 1950-51 the institutional infrastructure was not fully utilized and that the per institution increase may, in fact, have helped a fuller utilization of existing capacity. But those of us who have been involved in the field of education for all the past 40 odd years first as students and then as teachers know that this is not the case. The institutional infrastructure is certainly not adequate to meet the educational needs of the larger number of colleges or teachers. Even the growth in the number of universities has been relatively small—with the result that some of them, particularly the older affiliating universities, have as many as 150 to 175 colleges affiliated to them. These colleges are often spread over four or five districts.

One implication of this numerical growth is that the students may not get as much out of their education as they should, because their colleges do not have enough class-room space, play-grounds or libraries. In some of the states, as in Maharashtra, these problems are multiplied because students studying in the eleventh and twelfth classes under the 10+2+3 pattern are also required to be enrolled in the same colleges as students studying for their first degree. There are no separate institutions for the +2 stage. The actual number of students per college is therefore much larger than indicated by the data given above. Of course, the number of teachers is also larger, but the physical facilities, in most cases, have remained the same. College buildings have therefore to be utilized from 7 a.m. to 7 p.m. in two shifts—one for the Junior College and the other for the Senior College.

There are colleges in Bombay city where the enrolment is so large that in the 1st year of the 3-year degree course there are as many as 8-10 divisions. There are also colleges where if all the teachers of the college really decided to spend the required hours per day on the campus there is no staff room large enough to accommodate them all.

This problem becomes particularly acute in large cities and metropolitan areas, because while it is true that there has been an allround increase in enrolment, the increase in student enrolment in the major cities has been of a much larger magnitude. Unfortunately, I do not have figures to support this statement. But speaking for Maharashtra, we know that while the colleges in Bombay, Pune, Nagpur, Kolhapur, Kalyan, Thane and Sangli are required to admit students in excess of their capacity, the colleges in the smaller towns have sometimes proved administratively non-viable because of low student enrolment.

A numerical growth in the number of colleges affiliated to a single university has also meant that the various authorities of these universities cannot exercise the kind of supervision that they are expected to both for academic and administrative reasons. The Bombay University has 160 odd colleges affiliated to it, besides about 50 recognized research institutions. The University finds it difficult to send Local Inquiry Committee even once in two years. In the brief period that I have been associated with it, I find the University is barely able to inspect new colleges which have applied for affiliation in new subjects.

The fact is that the whole operation of biennial inspection and supervision of affiliated and recognized institutions cannot just be managed. The actual number of working days for most colleges is only 180 days per year, the number of members per committee has to be minimally 2 or 3 and all these persons must be 'senior' if they have to lend credibility to the Local Inquiry Committee's function. Further, unless one of the three members is a Principal of a College or is in some administrative position where he has secretarial support, the reports of the Committees don't get written and typed even months after they have visited the college. The University itself does not have a secretarial cell large enough to service every visiting committee appointed by it. The result is that there is a laxity in the supervisory and control functions which universities are expected to exercise over the colleges.

I do not wish to suggest that the College Principals are like so many naughty boys that require continuous or regular supervision. If it were so our education system would be in a much worse state than it is today. But, the assumption on which an affiliating university is based is that the various 'authorities' of that University ensure quality control over the affiliated institutions, ensure that there are proper physical facilities, well-equipped libraries and suitably qualified teachers to impart instruction to students. This assumption is not warranted when the university administration cannot cope with the functions entrusted to it.

There is another implication of the eight-fold increase in the number of undergraduate colleges in the three decades between 1950 to 1980. This is the implication for the quality of teachers likely to be available to the increasing number of colleges. At the time that the scales of salary of university and college teachers were revised from 1973 the U.G.C. had specified a certain set of qualifications for all new recruits to the profession and a programme of faculty development for those who were already in service but did not meet the qualifications; these qualifications have had to be scaled down atleast twice by the U.G.C. itself and at the state and individual university level they get further scaled down because persons with the requisite qualifications are not available or are not attracted to the teaching profession.

Even the requirement that existing teachers who do not meet the specified qualifications be encouraged to obtain their M.Phil. or Ph.D. degrees to improve their qualifications is not being met and, in fact, cannot possibly be met with the available facilities for enrolment for these higher degrees. In the Bombay University, in one particular discipline, there were last year about 200 teachers in all the colleges who needed to improve their qualifications. The enrolment capacity at the M.Phil. level in the post-graduate department of the University for that subject was approximately 15—20. Even if all the teachers were fully motivated and all the managements willing and able to spare their services it would take a period of at least 10 years to meet the back log, without counting the new teachers that are being recruited every year to meet the demands of an expanding student enrolment at the under-graduate level.

It is, of course, difficult to say whether the teachers being recruited today are any less qualified than those that were recruited earlier. College teaching is usually not the first choice of many who graduate with first class qualifications from the post-graduate departments of universities. It is, however, likely that when the industrial and tertiary sector of the economy had not expanded even as much as it has to-day, college teaching was an acceptable alternative for many who did not enter the civil services or the 'learned' professions where they could earn a good income. Today college teaching as a career has probably slided down further in the order of preference of young entrants to various occupations. Apart from the civil services and the traditional professions, careers in banking, management and other areas have opened out. This is true atleast for the metropolitan cities of Bombay, Calcutta, Madras, Delhi, Bangalore, Ahmedabad and a number of other growing centres. It is possible, therefore, that attracting good talent into teaching has become that much more difficult.

The seventeen-fold increase in student enrolment in our universities and colleges thus poses many critical problems of inadequacy of physical infrastructure, inadequate administrative support and a probable fall in quality of teachers available to the system of higher education. There is one more aspect of this increase in number of students which because it affects the motivation of the student has serious implications for higher education. This is the aspect of a lopsided growth in educational infrastructure and therefore, of student enrolment in the different faculties. The distribution of students shows that the percentage of all students enrolled in the Faculty of Arts has marginally increased from 39 per cent to 40% between 1950 to 1982; the enrolment in Science has marginally decreased from 21 per cent to 20 percent. In Commerce the enrolment has more than doubled from 10% to 22%. In all other faculties—viz. engineering or technology, medicine, agriculture, etc. the percentage enrolment has marginally decreased by 1 or 2 per cent.

Any one familiar with the aspirations of young students know that most of the good students, and even those who are not so good, wish to enter colleges of engineering and medicine. Our institutional facilities in these areas have, however, remained relatively limited so that the percentage of students who succeed in obtaining entry to these institutions has actually fallen—though the absolute numbers have increased.

This has important consequences for the morale of the college student. Unless he is among the first ten per cent of the best students he may not be able to choose a career of his choice. At the same time our educational planning has not thrown up a sufficient number of well-conceived, career oriented educational programmes. The universities have, in fact, a rather unflattering record when it comes to the development of new programmes suited to new needs of an urban, industrial society. The institutions of training for management, chartered accountants, company secretaries, social workers, catering, hotel management, etc. have largely grown as a result of initiatives outside the university system. Even in engineering and agriculture major initiatives for new courses of instruction have been taken outside the traditional university structure. The Institutes of Technology and the Agriculture Universities have been established as independent centres of higher education.

The lack of diversification in university instructional programmes adversely affects the morale of students who already feel that they have been unable to gain entry to the professions that have been traditionally known and respected. If the universities were to provide a somewhat more diversified programme of studies it is possible that the students would be more involved and motivated in their academic work while enrolled at the colleges.

Thus at present the universities seem to be trying to cope with two different problems in a way that one problem aggravates the other. The universities are faced with increasing numbers of students and at the same time the level of academic motivation of a large number of these students is not very high. They seem to go to college partly because a college degree is essential for a white-collar job, partly because they do not know what else they can do since, at the age of 17 or 18, a middle class boy is too young to enter upon a socially acceptable type of work in Indian society, partly because college provides a good excuse for doing nothing while you wait for a job or for marriage and partly because college has come to be looked upon as a necessary social experience in group life for young persons in Indian middle classes.

I cannot discuss here all the different aspects of university and college education. I wish to focus on the problem of coping with the ever increasing numbers. If the present trend continues the total enrolment of students in our universities by 2000 A.D. will be around 5 million at a conservative estimate. There is a fear that though our institutional infrastructure will also continue to grow the gap between infrastructural needs and available infrastructural facilities of the traditional type will continue to widen. There is a realization that a number of problems of student dissatisfaction' 'unrest' or 'indiscipline'—whichever word we may choose — are in part due to the inadequacy of the existing infrastructural facilities. If these facilities are going to be found increasingly wanting or inadequate, the problems arising out of student dissatisfaction will become unmanageable.

I am not suggesting that student dissatisfaction can be explained wholly in terms of the inadequacies of infrastructural facilities. There are other social, economic and political factors that are equally important in understanding student unrest. But for the present, we are concerned with factors internal to the education system and more particularly the problem created by large numbers of students who cannot be adequately provided for either in terms of physical facilities, or the types of courses available to them or the number and quality of teachers to teach them.

Apart from containing student dissatisfaction there are the positive goals of a system of education—imparting and developing knowledge, promoting the all-rounded growth of students as persons through inculcating in them a sense of values, a commitment to society and the ability to engage in creative, self fulfilling activity. These objectives of education cannot be served if the institutional infrastructure is hopelessly inadequate in relation to the number of students involved.

What are the solutions that are available to meet the whole or a part of the problem arising out of the pressure of increasing numbers in institutions of higher learning. It was thought that vocationalization of education at the +2 stage would reduce the pressure on colleges. This has not succeeded partly because we have not been able to vocationalize the +2 stage to a sufficient degree. The number of vocational courses available to the students who have completed the first 10 years of education are still limited in number and capacity. Part of the reason for this isthat a truly vocational programme of education costs more than a traditional college-oriented programme does. Another reason for the lack of success is that a substantial proportion of students who pass the 10th class are oriented to white-collar jobs and are not attitudinally ready for courses which will lead them into subordinate manual skilled work. This is due largely to their upbringing and the prevailing social attitudes.

There are possibly white-collar vocations for which they could be trained, if not at the 10+ stage, may be at the 12+ stage. But not enough thinking and experimentation has been done in this area. New occupations are emerging in the urban-industrial economy which need to be identified and for which specialized, diversified programmes of education and training need to be developed.

The problem of increased per head investment would still have to be tackled, but this need not be insoluble.

The other direction in which to seek a solution is to go extending the infrastructure of colleges and universities to cope with increasing numbers. As we have seen, this has not been possible and it has led to the present situation—atleast in metropolitan areas—of large colleges with enrolments of two to three thousand students. Operating such a system through the agency of a large, affiliating university leads to an inevitable fall in standards and to the adoption of the lowest common denominator in the setting of syllabi.

One of the partial solutions to meet this situation and also to provide greater experimentation was to allow selectively a growing number of colleges to become autonomous. This would give the teacher a greater sense of creativity and participation in curriculum formation, in evolving methods of evaluation and in meeting the diverse needs of their students. But this recommendation of the Kothari Commission has remained unimplemented with a few exceptions. It has met with opposition in the name of maintenance of standards (which don't exist) and for fear of dividing institutions into elite and non-elite (a division which already exists whether we recognize it or not). Autonomous colleges would also lighten the burden of university administration and break the inflexibility imposed by a common pattern. But, as I have said, this solution—although, a partial solution—has not found acceptance with many state governments and college administrations.

A third solution can be an expansion of correspondence courses leading to university degrees. Many such programmes already exist in the country and some of them are very successful in terms of enrolment and financial viability. In fact, this particular pattern of preparing students for a university degree is financially the most efficacious both from the point of student as well as the University. The University's major expenditure is on preparing written lessons on each paper in the syllabus, getting them printed and on posting them to the student registered. With standardized and limited course modules this works to be among the few 'profitable' understandings of a university. It is also inexpensive for the student—shorn, as it is, of all the different types of additional fees and hostel expenses that he would have to pay if he were a resident, college student.

There are, of course, limitations of the correspondence course programme. It provides for very limited teacher-student contact. In fact many universities are not able to provide any such contact. Since all the instruction has to be conducted through written material, it is not easy to prepare students for courses in which experiments, practical work or clinics are required. Thus the much sought for degrees in medicine and engineering are generally not available through the medium of correspondence courses. Even degrees in education, nursing, social work or straight pure science courses are not so far available through the medium of correspondence.

The programme of correspondence courses has not attracted large number of students when one considers the registration for these course in relation to students enrolled for regular inclass instruction. Using the data provided by the U.G.C. Annual Report for 1982-83 one finds that the percentage of enrolment in correspondence courses to the total enrolment of all the universities is around 5 percent for the years 1980-81, 1981-82. This is, of course, partly because not all the universities have programmes of correspondence education. If this percentage were worked out only for the universities which offer correspondence courses, the percentage might be higher. Speaking for Bombay the percentage of student enrolment in correspondence courses to the total enrolment at Bombay University for each of the years was 4.1, 5.1 and 5.5

It is obvious that despite of its other advantages the provision of correspondence courses by itself does not offer a means of coping with the problem of numbers faced by the university system in the country.

A new and somewhat modified version of 'distance' education is now being suggested by way of establishment of Open Universities. We already have one in Hyderabad and some of the other State Governments are thinking of starting similar universities to serve this need. The pattern of Open University education is not yet clear. But some of the modifications over correspondence courses that are being considered in this regard are:

(1) that unlike the correspondence courses the Open Universities may not insist on formal entry qualifications to their courses, though they may require applicants to pass certain eligibility tests.

(2) that they will be more flexible in the organization of their course sequences and will allow the student a greater variety of combinations.

(3) that, hopefully, they will use audio-visual media in addition to the correspondence medium for communication.

(4) that, they will provide in collaboration with the existing colleges, a greater opportunity for use of library facilities etc. etc.

All these proposals are welcome and in some measure they will widen the opportunity of education for those who are not in the college system. With the use of new technology and the television and video medium it could even overcome the limitation of the correspondence courses by offering professional courses. But the question is whether this will relieve the pressure of numbers on the traditional college system. To my mind this is not likely to happen—atleast not as a direct consequence of setting up the Open University. The Open University will meet the need of a highly motivated person who is already engaged in an occupation and cannot for that reason or for financial reasons join a college and yet is keen to gain new knowlege either as an end in itself or because it will improve his occupational skills or their marketability.

The large majority of the correspondence course students belongs to a slightly higher age-group than the college enrolled student. Many of them are already in employment. The correspondence course has not served as a viable alternative to college education even for these who wanted to study in the faculties of Arts and Commerce. It has primarily provided an opportunity for those who for economic or familial reasons could not join a college soon after they passed their high school or who having joined college had to discontinue it for some reasons. The case is not likely to be very different with Open Universities.

The young person who has passed high-school at the age of 17-18 is not necessarily highly motivated for education but he wants a degree and he wants the experience of having been in a college. The daily regimen of going to college, being with others of his own group, making new friendships, sometimes participating in extra-curricular activities, going on picnics, going to a movie, sitting in a coffee house are as important a component of this experience of going to college as is attendence in classes and appearing for examinations. This is true. I think, even for those college students who are not economically well-off and cannot afford to spend money on movies or in restaurants. They may form a different circle, but that circle is an important part of their life's experience.

If, therefore, the pressure of numbers on our colleges and universities is to be reduced in the interest of better education it can only be either by expanding the infrastructure and meeting the necessary costs or by limiting admissions on the basis of a prescribed minimum academic achievement at the High School level. Today no such limitations exist—especially for admissions to Arts, Science and Commerce faculties in the State Universities. Most state governments, and therefore, universities find it expedient to accept the position that they have the responsibility of providing college education to all those who have passed their higher secondary examination and are willing to pay the relatively low tuition fees charged by the colleges. Student organization assert that low cost higher education is their right and compel state governments either to open new colleges or to increase the number of students admitted per division, per college.

If we wish to divert a part of the young high school graduates from collegiate education to Correspondence Course or to Open Universities we will first have to lay down a minimum academic achievement as essential for college admission and at the same time improve and enrich our 'distance' education programmes in such a way that they prove attractive to the young student. This would require improvement in two directions—(i) improvement in the quality of lessons, the follow-up, the opportunity for contact and generally the content and technology of education and (ii) an effort to provide group life which is so essential to the young adolescent.

In all our thinking on education the latter aspect has received the least attention. Even for college enrolled students the structured opportunities for group activities provided by the college are limited and the work that students might do as a part of N.S.S., N.C.C., N.S.F. or Extra-curricular and Co-curricular activities goes largely unrecognized in their total performance assessment. It is essential to recognize that for an overwhelming majority of the college students—those who obtain pass class or low second class degrees—the academic content of college education is not making a meaningful contribution either to their work life or to their intellectual life. If the scope for the various types of group activities, could be expanded and included in the total assessment of the student, his college education would serve a greater educational and national purpose.

If this is so for collegiate students, it is even more so for the non-collegiate young student who is not yet employed and who may get pushed into the non-collegiate stream because he is a low scholastic achiever.

The challenge of creating an infrastructure for mobilizing non-collegiate youth in various types of group activities—curricular, socially oriented, or oriented to the development of their own personalities through sport or fine arts—is much more difficult to meet than extending the traditional structure of colleges.

All efforts to mobilize youth, which have been undertaken outside the educational institutions, have been led by individual political parties. This has not served the interests of students. Efforts must be made to mobilize and train students in various creative, character building, sports and social service activities through the educational system. The neglect of these aspects of education in the formal collegiate system is partially compensated by the students building their own group life. For the non-collegiate student structured opportunities would have to be created through contact periods, organized sports activity, organized social service activity and extension of the National Cadet Corps programmes. If this can be done the distance education stream may prove attractive even to the young high school leaver and will certainly be more beneficial to him and the country.

The problem, however, is that distance education has always been looked upon as a cheaper alternative to college education. If it is going to involve all these additional costs and additional organization problems it does not obviously offer a solution to the problem of coping with numbers at the collegiate level.

The problem of increasing numbers in the collegiate system is partly a reflection of the growth in the total population, partly a consequence of the middle-class, literary orientation of the system of education which only succeeds in extending the period of education from 10 to 12 to 15 to 18 years depending upon how far you can go and at what stage you can move away into the employment market, partly it is a problem of our failure to introduce diversified, vocational courses in sufficient numbers at early stages in education and, finally, of the lack of proportionate growth in employment opportunities for the young in our society. Of these problems some will have to be tackled largely outside the system of education and the others require investment of funds in modifying the pattern of education both at the pre-collegiate as well as at the collegiate level. There are no solutions which do not cost money and which do not call for hard decisions.

One cannot consider the question of costs in education particularly higher education—without considering the fee structure in our colleges and universities. The fee structure is based on the policy that the state must heavily subsidise education and reduce the cost to the individual student. Yet countries which adopt a policy of heavy subsidy for higher education usually also tend to restrict the numbers admitted to institutions of higher learning. The socialist countries do not allow every one who wishes to pursue a college education to do so. In the non-socialist countries there are only one or two developed countries—France is one of them—which give this facility of free higher education. In most others students going to colleges have to pay high fees even in terms of the local income levels in those countries. Because of a more favourable employment situation many students are able to support their education with part-time employment and the State subsidy is relatively low.

In India any suggestion to raise college fees is looked upon as anti-democratic, anti-student. Yet, a significant number of the students who seek entry to colleges have paid higher fees when they studied at the private 'society' managed schools or the so-called, exclusive 'public' schools. They also do not mind spending large sums of money by way of fees for special tuitions or to private tutors.

While I do not recommend the principle of capitation fees being charged to students, I see no reason why a graded fee structure cannot be evolved for college students. Students whose parents pay income tax or who have large agricultural incomes should be made to pay a larger share of the expenses incurred on them by the State for their education. Instead of following this open policy, some of the State Governments have now started permitting private societies to start *unaided colleges* charging high fees and in some cases charging capitation fees as well for a few seats reserved by management. This alternative is harmful because it goes against the principle of admission to higher education on the basis of merit. On the other hand, if 'aided' colleges which admit students on the basis of merit are allowed to charge higher fees from those who can afford to pay the government will be in a position to increase the in-take capacity of these colleges or start aiding new ones.

It would thus appear that "coping with numbers" calls for a complex strategy which (i) limits college admission to students with a required academic achievement, (ii) revises the college fees upward for those who can afford to pay, (iii) utilizes the funds so released for expanding education facilities and for strengthening the vocational bias of pre-college as well as collegiate education. If college admissions are restricted the demand for distance education will grow and this will have to be met imaginatively taking into account the young student's need for academic as well as extra-curricular activities. The content of such distance education can also be modified so that it provides not only for the normal degrees in liberal arts and commerce, but also in science and in fields covering some of the newly emerging occupations and professions in our society. This is a difficult task but well worth undertaking. It calls for the same kind of vision and dedication that went into the establishment of the National Council of Education in Bengal in 1906 which led to the establishment of this prestigious institution in 1955." □

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Role of Intelligentsia in Promoting National Integration

S.S. Johl*

No society or nation has ever been free from socio-economic and political conflicts throughout the history of mankind. Only a few limited periods of time have been marked by comparative peace and tranquility. Therefore, past has invariably been viewed as better and even golden age, whereas the present is normally taken as most difficult period; and, the future fraught with problems and danger. Yet, this is, precisely what has kept any society and its leaders on toes to deal with the situations. The real problem, however, arises only when a society loses its heart and self-confidence to face and match up to the situation.

The present situation in Punjab is, no doubt, very serious. Yet there is no reason to believe that the nation or the Punjabi society lacks the will, confidence and capability required to deal with it effectively. The problem in which we have landed today is the result of a grievious conspiracy of circumstances for which directly or indirectly, knowingly or unknowingly, we are all responsible. There is not much use in blaming and counter-blaming for what has happened. Even passiveness and indifference has contributed to the aggravation of this situation. The gravity of the problem hardly needs to be reiterated, because even the common man is very well aware of it, what to speak of the leadership and intelligentsia.

What matters today is what do we do in order to direct the march of events so that we are once again able to create an environment of mutual confidence, peace, communal harmony and security for socio-economic progress and political stability of the country.

The pre-requisite for any success in this direction is the change of heart on the part of political leadership. National objectives must prevail and pre-empt the narrow parochial and individual interests. A permanent or lasting solution of a political problem can never be found through violent means. One violent action leads to a chain of violent reactions and through this process the society lands into a never ending vicious circle. We have countries around us which have been confronted with such situations. In a democratic society, political issues and problems must find their solutions through dialogue and negotiations with sincerity of purpose and national interest in mind. There is no problem that cannot be solved amicably and equitably through democratic processes.

It is unfortunate that religion has been and is being misused in a most irreligious manner to serve narrow and selfish interests of certain individuals and groups. Religion is an extremely sharp-edged and sensitive weapon which can be easily and effectively misused for destructive purposes. Parochial and individual interests have always been tempted to misuse religion, and that too with impunity. In recent days it has been done so with a virulence totally unbecoming of religious ethos. We should not forget that a religion of a faith develops and expands only on the strength of love and kindness its protagonists profess and the sacrifices they make to uphold the basic human values which are universal in their character. Violence, murders, loots and crimes against humanity by the followers of any faith cut at the very roots of the faith. Sikhism, as a faith, got its roots firmly planted with the ungrudging self-sacrifice for universal human values by Shri Guru Arjan Dev, Shri Guru Teg Bahadur and his Sikhs, namely Bhai Mati Dass, Bhai Sati Dass and Bhai Diala. The foundations of this faith were further reinforced by the sacrifices of Shri Guru Gobind Singh, the Tenth Master of the Sikhs who sacrificed not only his own self but also prompted his father, Shri Guru Teg Bahadur, to sacrifice himself. He further ungrudgingly sacrificed his all the four sons and many beloved Sikhs. Yet, after all this, he bore no enemity against anyone. It is these selfless sacrifices which had firmly established the Sikh faith in a completely hostile and communal environment which prevailed in India at that time. Christianity today excels in coverage because of self-sacrifice of Jesus Christ for suffering humanity and the message of love it spreads in the strife-torne world. Hindu religion, likewise, expanded due to its message of non-violence, love and self-abandonment by Rishis and Tapaswis; Religion of Rakshas never grew beyond their self and the limited number of self-seekers whom the time soon erased from the face of the earth. Islam, again, stands solidly on the selfless and objective approach of Hazrat Mohammad and Hazarat Ali and on the self-sacrifice of Imam Hussain. There is enough historical evidence to show that every selfless sacrifice on the path of love and humanity has strengthened the foundations of religion and every murder, violence, plunder and crime against humanity shaken it from its very roots. What has been happening in Punjab during the last three years in sporadic form and what has happened in Delhi and rest of India a few weeks ago is nothing short of totally defacing

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**Vice-Chancellor, Punjabi University, Patiala.*

and debasing the religion, if at all the perpetrators of these crimes against humanity scandalously claim to belong to any religion. There can be no one more away from religion than these people.

It is high time that we wake up to the problem and play our role constructively in tackling the situation. Intelligentsia, including academicians, writers, artists and other thinkers in the society, have to come out of their retreats and cry halt to the fast deteriorating human values and socio-political conduct in the country. We need to remember and more essentially now, the famous proverb, "a bad coin replaces the good coin". Withdrawal from the situation by well-meaning and right-thinking people leaves a vacuum which is invariably filled up by self-seeking and unscruplous elements. This is exactly what has happened in India. Within the frame-work of democratic norms, the intelligentsia of the country has to rise to the occasion. Individually and in an organised way, healthy influences must be exerted, directly and indirectly, which should force the leaders of our society to act in national interest under some code of conduct which does not violate basic democratic, social and human values.

Academicians and academic institutions have a very special role to play at this juncture. Must they be spared from political influences and compulsions to allow them to function objectively in the best interests of the society and the State. Unfortunately, such unhealthy influences now permeate into the very fabric of educational institutions. As a result the energy, talent and intellect that should develop objectively to serve national interests and the human society, get diverted to such channels which serve only the parochial and individualistic interests. In educational institutions there is a vast reservior of energy comprising impressionable and bubbling youngmen and women, which if properly harnessed and channelised into objective thinking and constructive work by purposeful and inspired teaching community, can quickly bring about the desired changes in the quality of life in our society. For this, a pre-requisite is that we, the teachers at all levels, must rise above self, cleanse our hearts of smallness and parochial thinking and communal interests. Instead, we must cultivate broad mindedness, national pride and respect for basic human values in our preachings and practices. But the questions, a big question is, are we mentally prepared to do so? □

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(3) Planning, development and implementation of systems in the context of science and technology.

The selections for the year 1985 will be completed by December 1985 and the awards presented on 12th August, 1986.

The last date for receiving nominations is August 31, 1985. Candidates themselves or the sponsors are requested to send a two page note (12 copies) summarising the contributions and achievements of the candidate together with his/her bio-data in a cover marked confidential, addressed to the Director, Physical Research Laboratory, Navrangpura, Ahmedabad-380009. Proposals made for the year of the award would only be considered.

More detailed information will be asked for by the Selection Committee, if considered necessary.

Science & Technology Promotion Programmes of Department of Science & Technology

Introduction

A principal activity of the Department of Science and Technology (DST) is the coordination and promotion of S&T activities in several frontier and newly emerging areas of science and technology. This is done through several programmes/schemes implemented in a coordinised manner by the Science & Technology Promotion (STP) Division of DST. The salient features of the programme operated by STP Division are given below. Scientists and engineers are invited to make full use of the opportunities being provided under these pragrammes....

1. SERC & GRC Schemes for Research Support

The Science & Engineering Research Council (SERC) scheme and the General Research Scheme (GRS) of the department support time bound research projects usually of three years duration in areas which normally do not come under the direct purview of agencies like ICAR, ICMR, UGC, CSIR, etc., and Departments like Atomic Energy, Electronics, Environment, Ocean Development and Space. The objectives of the SERC and GRS schemes are....

(1) SERC: To support frontline research in emerging areas of science and engineering and in interdisciplinary fields. Research programme should be capable of making a significant impact on the scientific scene.

(2) GRS: To provide general research support to scientists on broad basis irrespective of institutions or areas of work so that they would not have to look for assistance from abroad, particularly under specific foreign currency programmes.

2. Thrust Area Programmes (TAPs)

The SERC scheme also encourages research in the identified Thrust Areas through a support mechanism which is more flexible and comprehensive than the one followed for individual research projects. New activities to be supported in Thrust Areas are:

(i) Coordinated research through Thrust Area Programme (TAP)
(ii) Setting up of Research Core Groups or Units
(iii) Training Programmes in identified areas of research, involving Young Scientists
(iv) Setting up of Support Facilities for research.

TAPs include major research programmes to be undertaken by Indian Scientists from different institutions in a coordinated manner, to enable the creating of a significant impact on the Scientific Scene.

**Note: Thrust Area Booklets in Life, Chemical, Physical & Engineering Sciences are separately available.

3. Intensification of Research in High Priority Areas (IRHPA)

This scheme is designed to provide a major conscious support to a few areas of research that have high priority from the viewpoint of advances in fundamental science or can be of great significance for national development. Intensive research in such areas of high priority is promoted by the following mechanism:

(a) Building up of a core group around highly competent Scientist.
(b) Supporting major national R&D programmes involving several institutions and agencies.
(c) By establishing specialised facilities critically required for carrying out research in high priority areas at the national level.

The mechanism of funding under IRHPA is closely related to SERC.

4. Promotion of Scientific Interest in Youth

To encourage involvement of young scientists (approximately 18-35 years age group) in the national S&T development process and to promote their interest in science, the following activities are supported under the Scheme:

(1) Small research and development projects and feasibility studies to promote scientific interest in youth.
(2) Organisation of seminars/symposia on subjects relevant to the promotion and encouragement of scientific interest in youth.
(3) Travel grants to young scientists for attending Training Courses, Summer/Winter Schools in India and abroad.
(4) Publications aimed at promoting scientific interest in youth.

5. Assistance to Professional Bodies and Science Academies

The DST has so far been providing limited support to the professional bodies in the field of Science & Technology and to Science Academies (hereafter called societies). A new scheme has been drawn up for specific provision of financial support to the societies in a manner which will enable these

to take on the extended responsibilities of creating a cohesive integrated scientific community through arranging regular meetings and conferences, publishing high quality journals, encouraging meaningful discussions, organising Science exhibitions etc. in a coordinated manner.

6. Support for Seminars & Symposia in Science & Technology

Financial support under the Scheme is provided for organising Conferences and Seminars as well as for publishing their proceedings.

7. Partial Financial Support for Participation in International Conferences

Partial Financial Assistance towards travel is provided to Scientists for atttending international Conferences/Seminars/Workshops etc. The scientists should have an accepted paper for oral presentation in the Conference and/or an invitation to deliver a talk. The Indian National Science Academy (INSA) is already providing such support for Conferences sponsored by International Council of Scientific Unions (ICSU); the support from DST is therefore restricted to only non-ICSU conferences.

8. Futures Research

The objectives of the scheme are to promote research studies on quantitative modelling on various economic and commodity sectors, to examine existing ones and new policy instruments needed in future to foster economic growth through applications of S&T, and also to generate, through seminars and workshops, awareness to application of anticipatory techniques.

9. Scheme for Development of Scheduled Castes and Scheduled Tribes in Science & Technology Areas

This scheme is for the promotion of Technology for occupations engaging Scheduled Castes, Scheduled Tribes, landless labour and linked occupations. It focusses attention on an area of work requiring a special effort not available under the existing ongoing schemes. In particular, under this Scheme, it is proposed to support specific surveys to identify areas and the required technologies, formulate and implement projects to generate the same and promote programmes for field applications and proto-type development.

10. Science & Technology for Women

This Scheme has two major aspects,...first relates to the role of Science and Technology in improving the life, working conditions and opportunities for gainful employment for women and the second to the contribution that women can make to the development of S&T and its application.

Under the scheme, it is proposed to formulate an All India Coordinated Project on Development of Technologies to benefit women in general (in reducing drudgery, increasing productivity in their areas of work, opening up of new vocations for them etc.).

11. State Councils on Science & Technology

This Scheme was initiated to catalyse the setting up of State Councils on Science & Technology. The main role of these Councils is to act as focal points in the States for Planning, Coordinating, promoting S&T activities within the State.

12. Regional Sophisticated Instrumentation Centres (RSICs)

The RSICs provide sophisticated instrument & equipment facilities to scientists from educational institutions, R&D Laboratories and industry on nominal charges. Scientists & Engineers are requested to make full use of these opportunities being provided under the DST programmes for S&T promotion.

Seven such centres have been established and are operational at:

(1) Indian Institute of Technology, Bombay
(2) Indian Institute of Technology, Madras
(3) Bose Institute, Calcutta
(4) Central Drug Research Institute, Lucknow
(5) Panjab University, Chandigarh
(6) North Eastern Hill University, Shillong
(7) Nagpur University, Nagpur

(Note : Detailed booklet is separately available)

For details and application forms please contact :

Adviser, Science & Technology Promotion Division
Department of Science & Technology
New Mehrauli Road
New Delhi-110 016
Telephone : **662260**
Telex : **031-2096 DST IN**
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USEFI Seminar on Role of Higher Education in Developing Countries

A one-day seminar on the Role of Higher Education in Developing Countries was organised by the United States Educational Foundation in India in New Delhi on January 15, 1985. Dr. Ernest Boyer, President, Carnegie Foundation for Advancement of Teaching, Princeton, New Jersey, who had come to India on a short-term distinguished professor grant, gave the keynote address at the seminar. In his address Dr. Boyer emphasised six principles on the role of higher education in a nation. Education and national development are inextricably inter-locked. There was clear relationship between a nation's classrooms and development. Educated citizenary was crucial if a country was to progress, he emphasised. The most important role played by higher education was in sustaining the heritage of culture and the training of leaders.

He further said that higher learning must be concerned with the preparation of students for productive work. The next principle that he outlined was that higher education should be concerned with the usefulness of knowledge for national development.

Continuing, he said higher education had a special obligation to educate adults. Higher learning must also be concerned with the quality of school education.

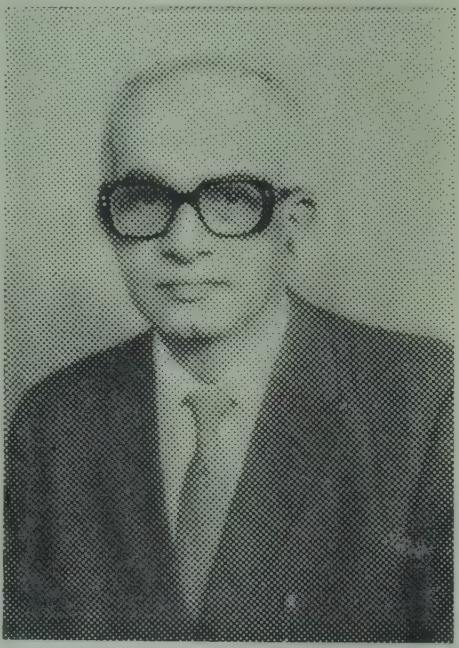
Finally, he said that higher education must be concerned not only with "excellence" but also with "equity".

The seminar also discussed other aspects of higher education like utilisation of INSAT-1B for higher education, educational planning, role of higher education vis-a-vis growing needs from international year of youth, allocations to higher education and restructuring of courses at undergraduate level. Papers were presented on each of these themes which were followed by discussions.

New Vice-Chancellor of University of Madras

Dr. B.B. Sundaresan, who has recently taken over as Vice-Chancellor of the University of Madras, was born on 19 February 1929 in Kombai village, Madurai district. After primary school education in the village he completed his high school education in Rishivalley school, Chittoor district (AP).

He obtained B.E. degree from the Madras University in 1951. After serving as a Junior Engineer in the Public Works Department of Tamil Nadu, he joined the Tamil Nadu Directorate of Technical Education in 1953 as an associate lecturer. He obtained his Master's degree in Public Health Engineering in 1959 from the Madras University. During 1961-66, he was engaged in research at the University of Florida, Gainsville, Florida, USA, wherefrom he obtained Ph.D. degree in Environmental Engineering in 1963. Continuing his post-doctoral research in air pollution control systems, he developed and patented a process for control of air pollution. On return to India in 1966, he was appointed an assistant professor of public health engineering and promoted as professor in 1968. During 1974-77, he was professor-in-charge of Post-graduate Studies and Research, College of Engineering, Guindy, Madras. He served with distinction as Director, NEERI, one of the national laboratories under CSIR during 1977 to 1984.



Dr. B. B. Sundaresan

Dr. Sundaresan has over 70 scientific papers to his credit and is the co-author of three books. He was awarded the Institution of Engineers prize in 1965 and 1973 for best technical papers.

He is a Fellow of the Institution of Engineers (India) and Chairman, Nagpur Centre during 1980-82 and Member of the American Society of Civil Engineers; Computer Society of India; and Indian Society for Technical Education. He was President of the Indian Water Works Association, 1980.

He was a member of the Board of Post-graduate Studies in Engineering, Madras, Nagpur, Andhra and Kerala Universities. He is a recognized doctoral research guide of Madras, Osmania and Nagpur Universities.

He is member of the National Committee on Environmental Planning and Coordination (NCPEC) and Central Water & Air Pollution Control Board.

He has visited several countries as an expert under various international (WHO, UNEP) assignments, some of which are USA, Canada, UK, Netherlands, Denmark, Peru, Brazil, Senegal, Zambia, Zimbabwe, Republic of Congo, Egypt, Yemen and Thailand.

Punjabi Varsity's Development Plans

Punjabi University has identified a requirement of atleast Rs. 3.50 crore for its development projects during the Seventh Plan period.

The University has strengthened its planning and development cell and initiated a process for evaluation of its academic and administrative activities.

The semester system was introduced this year in all courses. The internal evaluation system which is an integral part of this system, is proposed to be adopted from the next session. The aim is to remove the dichotomy between examinations and class room education. Examinations under this system will form an integral part of education.

Efforts are being made to establish a regional computer centre on the campus so that research scholars can benefit from advanced analytical techniques. The University Grants Commission has been approached to finance this endeavour. An intercommunication system has been introduced to reduce recurring expenditure and to increase efficiency.

As many as 22 Readers, 45 Lecturers, three Assistant Registrars, four Superintendents (Grade II), seven Superintendents (Grade I), and several junior functionaries have recently been promoted under the merit promotion scheme. Several outstanding scholars have also been inducted into the University as teachers and research workers.

Postgraduate courses in music, journalism and mass communication are the new additions to educational programmes on the campus and those in Punjabi, Economics and English at the Regional Centre at Bhatinda.

The postgraduate course in Philosophy, which had to be dropped this year as the staff was not considered adequate for the purpose, may also be started from next year.

The campus is being given a face-lift after nine years.

Among the main buildings under construction are a new administrative block, staff quarters and hostels. The Rs. 28 lakh administrative block will house the offices of the Pro-Vice-Chancellor, Registrar, Dean of Academic Affairs, Dean, Colleges and Accounts Branch. The new block will enable the secrecy and examination branches to work more efficiently.

The Punjabi University Regional Centre was inaugurated at Government Rajindra College, Bhatinda on 19th December 1984 by Dr. S.S. Johl, Vice-Chancellor of the University. Dr. Johl hoped that the Centre would develop into a full-fledged University soon. He said land for the Centre was being acquired and the building would come up in five years at a cost of rupees one crore.

At present post-graduate teaching in English, Punjabi and Economics was being imparted at the Centre and teaching of other subjects would be taken up in the coming years.

He stressed the need of insulating educational institutions from the day to day strife and bellingerency of active politics and advised the students to keep themselves above dangerous and dark ideologies.

Dr. Johl assured that the expansion of the Centre would be made at a rapid rate as substantial funds from the Punjab government and the UGC were expected.

Seminar on News and New Technology at BHU

A two-day seminar on 'News and New Technology', organized by the Department of Journalism and Mass Communication, Banaras Hindu University, in collaboration with the United States Information Service, New Delhi, concluded at Banaras recently.

The seminar, attended by about 20 senior journalists from all parts of Uttar Pradesh, was inaugurated by Mr. Rajendra Mathur, Editor Nav Bharat Times, New Delhi, recently. Dr. Iqbal Narain, Vice-Chancellor, Banaras Hindu University, presided over the inaugural function. Professor R.E. Stannard, Chairman, Department of Journalism, at the Western Washington University, and now a visiting Professor at the American University at Cairo, was the Chief Guest and main speaker at the seminar.

In his inaugural address, Mr. Mathur spoke on the problems of language journalism, with special reference to Hindi Journalism, in the country. He asked the editors to take advantage of the technological innovations in the field of printing and production to reach the rural masses who are ill-served now.

Dr. Iqbal Narain, in his Presidential Address, called for a new orientation towards development and social change in news writing, and reminded the editors of their role of social responsibility.

Prof. Stannard, in his two lectures on "What will make news in 1994" and "News and New Technology", delved on the technological advances made in the field of communication in the last two decades. The new technology has not only made information easily accessible to the people, but it is increasingly becoming cheaper. Also, the new technology will give greater control to the consumer to choose and pick the kind of information he would like to get. Although technology has made information cheaper, easy to store, move and more user-oriented, it is difficult to visualise its consequences on content, said Prof. Stannard. He was confident however that information control will become more and more decentralised in the years ahead because of the advances in technology.

Prof. A.K. Banerji, Head, Department of Journalism and Mass Communication, Banaras Hindu University, speaking on "Journalism education in India and the US", called for greater cooperation between the two countries in terms of exchange of teachers and reading material. He recalled the growth of Journalism education in the country, and spoke of the challenges it had to face in view of the fast technological advances in the media industry. Prof. J.S. Jadhav, of the Indian Institute of Mass Communication, New Delhi, presiding over the session, suggested for an orientation towards research which should be inculcated in the student planning to get into the business of communication.

Indian Academy of Cytologists meets at AMU

An eminent Cytologist Dr. (Mrs.) Usha B. Saraiya said that the discipline of the Cytology stands on solid foundations. It had achieved much, and was looking forward to an ever-enlarging role in the progress of the country.

Delivering the presidential address at the 14th Annual Conference of Indian Academy of Cytologist held at Aligarh Muslim University, she chose to touch on the relevance of Cytology to a developing country like India, and to review the role that the Academy had played in the last 15 years in this context.

Dr. Saraiya asserted that the problems of our country were as vast as its size and its resources. The main advantage of Cyto-Diagnosis was that it can and must be taken to the grass roots, to the rural population, she added.

Prof. P.N. Wahi, the President Emeritus, inaugurating the Conference said that the Cytology was a disciplinary programme and was vitally important in the field of daignostic laboratory.

Prof. K.M. Bahauddin, Pro-Vice-Chancellor of AMU said on the occasion that cytology was concerned with the study of human body from the primary sources. He asserted that Aligarh Muslim University is like rural University, where the resources are limited.

Prof. Ansar A. Khan, Organiser of the Conference, explained that Cytology is a well established and reliable diagnostic technique in Chemical Pathology for the early detection of Cancer. Besides Cancer, Cytology played an equally important role in the identification of various specific and non-specific infections also.

Symposium on national integration at Jammu Varsity

Shri Ali Mohammad Naik, Minister for Education, Jammu & Kashmir, inaugurated a symposium on National Integration in the Department of Education, New Campus on Nov. 20, 1984. The symposium had been organized by the Directorate of Youth Welfare in collaboration with the Students National Integration Celebration Committee whose convener of the University chapter is Shri K. K. Gupta, the Registrar. Prof M. R. Puri, the Vice-Chancellor, called for a climate of love, peace and brotherhood, which alone can lead us to the destiny that Gandhi and Nehru have envisioned for India. Sri Naik emphasized upon the government's determination of curbing anti-national forces and urged upon students and teachers to work for communal harmony and respect for democratic values of our society. Several students and teachers also spoke on that occasion.

Delhi University Chemistry Department scheme approved by UGC

A special Rs. 45 lakh scheme of the Chemistry Department of the Delhi University recently approved by the UGC provides for strengthening of research facilities in the areas of Synthetic Organic Chemistry, Chemistry of Coordination Compounds and Organo Metallic, Theoretical Chemistry, Instrumentation, Bio-Molecular Interaction, Electro-Chemistry, etc., it is reported. A qualitative change in performance and results are expected.

At the level of postgraduate education emphasis would be on strengthening the curriculum by modernising its content and scope, upgrading laboratory facilities for project, experimental and field work, changing to methods of teaching more conducive to student learning and creativity and to adopt techniques of tutorials, seminars, home assignments, etc.

Also restructuring of courses based on inter-disciplinary ingredient options and new techniques of examinations and evaluation are envisaged in the scheme.

It is also reported that the Department of Chemistry of the Delhi University has been asked

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VCs of Asian and Pacific Region to meet at New Delhi

A Conference of the Vice-Chancellors of Countries in the Asian and the Pacific Region is being organised by the University Grants Commission. The Conference, first of its kind in this region is proposed to be held from March 18 to 21, 1985 in New Delhi. About 50 Vice Chancellors from the countries of the region are expected to attend. The aim of the Conference is to provide "a forum to the educational administrators and academics of the Asian and Pacific Region to familiarise themselves with the problems and experience of each other in the field of higher education." Apart from a mutual exchange of ideas, the Conference would provide an opportunity for devising "appropriate proposals for the promotion of Cooperation on a long term basis amongst the academics of this region."

Various aspects of higher education like problems of higher education, academic standards, curricula, teaching methods and material, student discipline, management of institutions, extra-mural courses, equivalence and recognisation of degrees and mutual cooperation in the areas of exchange of students and teachers, cooperative research programmes, etc. are likely to figure in the discussions at the Conference.

to ensure that 25 per cent of the seats are made available to students coming from other universities.

BSc course in Electronics at Burdwan Varsity

A new BSc Electronics course has been introduced in Burdwan College and Triveni Devi Valotia College, Raniganj, affiliated to the Burdwan University. Twenty-five students would he admitted to the course in each of these colleges. The course has been introduced in accordance with the University Grants Commission suggestion on restructuring undergraduate courses.

The university also proposes to introduce a post-graduate Computer Technology course. For this purpose a computer was being purchased from Hewlett Packard Co. of USA at a cost of Rs. 10 lakhs.

Research in music planned at Tamil Varsity

An endowment of Rs. 3 lakhs for research in Tamil 'Isai' has been planned by the Tamil University, Thanjavur.

Besides collecting works of all Tamil musicians, records on the traditional singing of *Tiruvachagam*, *Divya Prabhandam* and *Pann* would be collected.

The University also proposes to import spectogram, the modern electronic equipment, for the analysis of various *Ragas* and *Panns*. This equipment is also expected to be helpful in the study and analysis of folk arts, folk music and linguistics.

Unesco Director in India visits Cochin University

Dr. M.P. Derkatch, Director, Unesco representative to India visited the University of Cochin and held discussions with Vice-Chancellor, Dr. K. Gopalan.

Impressed by the various research activities of the University Dr. Derkatch discussed about Unesco's possible future collaborations with the University. He also expressed satisfaction over the two on-going research projects, assisted by the Organisation, at the University's School of Environmental Studies.

Postgraduate courses in three colleges in Andhra Pradesh

Sri C.R. Reddy College, Eluru, Andhra Pradesh, has been permitted to start postgraduate courses in Economics, Politics and Industrial Relations & Personnel Management during 1984-85 subject to fulfilment of certain conditions.

V.R.S. and Y.R.L. College, Chirala, has been permitted to start postgraduate courses in MBA.

Sri Sarvodaya College, Nellore, has been permitted to start postgraduate courses in Commerce and English from this academic year.

Jabalpur University library to be computerised

The library section of the Jabalpur University will soon be computerised at an estimated cost of Rs. 30 lakhs, according to the Vice-Chancellor of the University, Dr. Amaresh Avasthi.

The Vice-Chancellor, claiming this to be first ever being attempted by any university in India, said "a reader will have to just push a button to instantly find whether a particular book is available in the library and where".

Workshop on adult education at Punjabi Varsity

A one-day workshop on "Adult Education" was held on the Punjabi University Campus to discuss the implementation of adult education programmes on December 8th 1984.

Prof Amrit Kaur, head of the Centre for Adult and Continuing Education of Punjabi University, stressed the need for involving college students in adult education programmes for achieving universal literacy at an early date.

Mr Kulwant Madan, Director, Planning and Development Punjabi University, called for increasing the facilities for promoting adult education.

News from Agril. Varsities

State level winter institutes organised at PKV

Winter Institutes were organised by the Punjabrao Krishi Vidyapeeth, Akola from 14 to 21, January 1985.

In his introductory speech Dr. Baporikar gave an outline on the winter institutes. These institutes, he said had been sponsored by the Vice-Chancellor's Coordination Committee with a view to give encouragement to the activities related to the improvement in teaching.

Dr. K.R. Thakare, Vice-Chancellor of the University inaugurating the Winter Institute on 14th January explained the purpose of organising such state level winter institutes and emphasised that the University had taken initiative to propose some improvements in the teaching with the objective of providing recent and advanced information to the students.

The Chairman of the function Prof. Wanjari, Dean, Faculty of Agriculture said that agriculture had become a system of cultivation where collective thinking and efforts of all the related subjects were involved and watertight compartments in the faculties were going to be eliminated. Considering the importance of the knowledge of other subjects, efforts were needed to form the required combination with other subjects to form a particular system which will be more practicable. For this brushing up of the knowledge was very necessary, he said.

Japanese researchers visit Soils Department Projects of HAU

A team of three researchers from the Tropical Agriculture Research Centre of the Ministry of Agriculture, Forestries and Fisheries of the Government of Japan paid a three-day visit to Haryana Agricultural University from 2-5 December 1984. The team which was led by Dr. Fumio Ewata, Research Coordinator for Information of the Centre was primarily concerned with the research activities in the areas of soil management, irrigation system and crop production in the arid zones. The team had extensive discussions with the scientists in the Department of Soils, Agricultural Engineering and Dryland. A visit to Pali village, near Hansi, was arranged. The team visited ICRISAT farm in the research area of the University farm. The team also called on the Vice-Chancellor, Mr. L.D. Kataria and exchanged views on the agricultural problems of the country.

Landgrant Universities representatives at HAU

A US delegation led by Ms. Francille M. Firebaugh, Vice-Provost for International Affairs, the Ohio State University paid a one-day visit to the Haryana Agricultural University on 22 November 1984. The delegation was accompanied by the Deputy Director General, ICAR (Animal Nutrition) Dr. R.M. Acharya. The delegation had discussion with the Vice-Chancellor and visited the research farm area and the various colleges. In the afternoon a meeting with the Vice-Chancellor, Deans and Directors, and officers of the University was held.

The Vice-Chancellor explained to the team the detailed working of the University, progress made by the University in various spheres and the perspective planning for the future.

Sports News

Zonal teams for Vizzy Trophy

The following zonal teams have been selected to participate in the University Cricket-Zonal Championship for the Vizzy Trophy to be organised at Madras from 1st February to 9th February, 1985.

North Zone

Ashvini Kapoor (Delhi); Atul Mahendra (Delhi); Rajiv Vinayak (Delhi); R.K. Puri (Panjab); D.K. Jain (V. Capt.) (Delhi); Ravinder Mann (Panjab); Sukhvinder Singh (Rajasthan); Kishan Sharma (Aligarh); Maninder Singh (Capt.) (Delhi); Sunil Agarwal (Delhi); Rattan Singh (Rajasthan); Sri Srivastava (Delhi); Arun Bedi (Panjab); and Sanjay Chauhan (Delhi). Manager: Dr. T.N. Bhatnagar; Baggageman: Mr. Kan Singh of Rajasthan University, Jaipur.

East Zone

P. Jaiswal (Patna); S.B. Banerjee (Patna); Amit Hore (Calcutta); Utpal Chatterjee (Calcutta); Ajoy Verma (Calcutta); P. Mahalik (Utkal); P. Bhar (Calcutta); Gautam Shome (Capt) (Calcutta); Sanjoy Ranjan (Patna); L. Mahapatra (Utkal); Jitendra Singh (Calcutta); Ritu Raj Sharma (Patna); Dattatreya Mukherjee (Calcutta); and Sandeep Mitra (Calcutta). Manager: Prof. Tapan Dutta, Calcutta University Cricket Team; Baggageman: Sri Shyamsunder Kundu, Staff, Calcutta University.

South Zone

Nandan (Bangalore); M.F. Rehman (Andhra); Ehtesham Ali Khan (Osmania); Zakir Hussain (Osmania); D. Suresh (Osmania); K.M. Sarvottam (Mysore); M. Pratap (Mysore); Manjunath Singh (Mysore); S.V. Ramana (Mysore); B.S. Mangesh (Andhra); T.P. Ajit Kumar (Kerala); S. Krishna Kumar (Bharathidasan); Akbar Ibrahim (Madras); and D. Girish (Annamalai). Manager : Sri P.R. Narayana Swami (Andhra); Baggageman: Sri P. Chinnarao (Andhra).

West Zone

Sanjay Manjarekar (Capt.) (Bombay); Rakesh Parikh (Vice-Capt.) (M.S. University); Jayprakash B. Jadhav (Bombay); Mukesh Narula (M.S. University); Jaideep Mathur (Bombay); Salil Datar (Bombay); Mayank Khandwala (Bombay); Pranav Desai (South Gujarat); Sumit V. Shukla (Saurashtra); Jeevan Hegde (Pune); Tushar Arothe (M.S. University); N.C. Deshmukh (Shivaji); Abhijeet Patankar (Jiwaji); Vijay Jaiswal (M.S. University); and Sudhakar Harmalkar (Bombay).

Manager: Shri Sunderlal B. Dalia, Dept. of Physical Edn., Union Pavalion, Near Rosary High School, Baroda-390 002.

Universiad 1985 : India-China Universities Football Match

Association of Indian Universities is organising a Football Match between the Chinese Universities Football Team and the Indian Universities Football Team at Jawaharlal Nehru Stadium, New Delhi on 12th Feb., 1985 at 3.00 p.m. The match is being organised in collaboration with the Sports Authority of India.

The fixture is a part of the Football Tournament of the next World University Games scheduled in Kobe, Japan in August-September, 1985. The return match will be played between both the teams in China on 10th March, 1985. The winning team will qualify for the main competition at Kobe.

Inter-University Hockey (M) East Zone

The following are the results of the Inter-University Hockey (M) Tournament for the East Zone conducted by the Awadhesh Pratap Singh University at Rewa (MP) during January 1985 :

Winner : Dr. Hari Singh Gour University, Sagar; **Runner Up** : Guru Ghasidas University, Bilaspur; **Third Place** : Banaras Hindu University, Varanasi; **Fourth Place** : Calcutta University, Calcutta.

North Zone Inter-University Football Tournament

The following universities have been declared as the best four universities in the North Zone Inter University Football Tournament for the year 1984-85. The North Zone tournament was organised at the Aligarh Muslim University:

(1) G.N.D.U., Amritsar (Winner); (2) Delhi University (Runner's up); (3) Punjabi Univ., Patiala (Third place); and (4) Meerut University (Fourth place)

By virtue of the above results Guru Nanak Dev University and Delhi University have qualified to participate in the Inter Zonals of this Tournament to be held in Kohlapur some time after the middle of March 1985.

News from Abroad

Non-graduates for Master's degree courses

Students without first degrees are now being allowed by the Council for National Academic Awards of UK to register for the postgraduate courses it validates.

These courses at the masters' level are generally "taught" courses. Students can go on from there to research at MPhil and Doctorate level. The number of students are small however.

The CNAA is responding to pressures on institutions to accept students with non-traditional qualifications especially against the background of the growth in master's degree courses in new subjects like information technology, bio-technology, etc.

Also CNAA has changed its regulations and reduced the duration of these courses to one year from being two years because of the competition from university one-year courses.

Lancaster University sets up diver performance research unit

The Lancaster University, UK, it is reported, has set up a diver performance research unit to test the long term psychological effect of deep sea diving. The unit, it is reported, will "investigate whether brain damage is caused over a long period by arduous working conditions in harsh environments, and continued subjection to the process compression and decompression".

CALENDAR OF EVENTS

Proposed Dates of the Event	Title	Objective	Name of the Organising Department	Name of the Organising Secretary/ Officer to the contacted
February 7-9, 1985	Seminar on Home Economists as Extension Workers	To make home economists aware about their multifarious roles to promote rural development reconstructural society and uplift their social status.	Department of Home Science, Dayalbagh Educational Institute, Agra.	Miss Asha Lata E. Robin, Head of the Department.
February 11-15, 1985	International Conference on Progress in Metallurgical Research—Fundamental and Applied Aspects	To provide a forum for the review of recent advances and latest trends in research in various disciplines of metallurgical engineering	Department of Metallurgical Engg., IIT, Kanpur.	Dr. S.P. Mehrotra/T.R. Ramachandran, Department of Metallurgical Engg., IIT, Kanpur.
March 13-16, 1985	Workshop on Solid Mechanics	To provide the research workers with an opportunity to exchange their views and experience and thus learning more about the subject.	Department of Mathematics, University of Roorkee, Roorkee.	Dr. A.P. Gupta Organising Secretary
November 28-29, 1985	International Conference on New Technologies in Higher Education	To assess the possibilities of the now available new technologies in the background of the broad social and cultural context and the state and trends of Higher Education in India and other developing countries.	Association of Indian Universities, IIT/Delhi, JNU, Jamia Millia and University of Delhi.	Prof. Tapas Majumdar (JNU), Prof. S. Shukla (Jamia Millia), Prof. L.R. Shah (JNU)

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Cottage Industries and Handicrafts Some guidelines for employment promotion

Most developing countries, disenchanted with the adverse consequences of pursuing large-scale capital-intensive industrial development strategies, have now turned to the promotion of small enterprises as a means of ensuring the equitable distribution of income and the expansion of employment.

The purpose of this book is to highlight not only the importance of very small enterprises but also the constraints faced by planners, policy-makers, various promotional institutions, researchers, project designers and managers in tackling the unusual needs and circumstances of these production units; and to provide procedures for formulating, implementing, monitoring and evaluating appropriate programmes for promoting very small enterprises.

Creating a Market

An ILO Programmed book

This book serves as a concise manual for those starting the study of marketing or wishing to brush up their knowledge of the subject. It is mainly concerned with consumer goods industries and introduces the reader to the major activities involved and some of the problems arising when a firm decides to adopt an active policy in the marketing field.

"It is as lucid and logical an introduction for the often complicated marketing process as can be found. Every student aiming for a Business and Industrial Management diplcma should regard this manual as a must" (*Management*, Auckland, NZ)

The Reduction of Working Time Scope and Implications in industrialised market economies

The reduction of working time is now a subject of topical interest because it has been suggested that such a reduction can help to deal with the serious problems, especially unemployment, that always arise during a depression. The author begins by outlining the theses and arguments put forward with regard to the potential effects of a reduction in workingtime in industrialised market economy countries. She examines the implications of such a reduction for the individual, the establishment and the community as a whole. Desirable features of any action taken to reduce working time are outlined in the conclusions.

Clandestine Employment

As an introduction to the study of this complex matter, this book outlines both the current situation and the discussions on clandestine employment which are at present taking place in the industrialised market economy countries. In the first part the author defines clandestine employment and places it in its context in relation to the underground economy, examines its development and gives an idea of those, both employers and workers, who call upon it or who are engaged in it. In the second part the causes for taking on undeclared jobs are enumerated and their positive and negative features are examined. Finally, the measures taken in certain countries and the results obtained are outlined.

Poverty in Rural Asia

The chapters in the present volume examine changes over time in the levels of poverty in the rural areas of seven Asian countries: Pakistan, India, Nepal, Bangladesh, Thailand, Indonesia and Sri Lanka. They draw upon the most recent household income and expenditure surveys and other data to analyse changes in rural poverty from the 1960s up to the mid or late 1970s.

Statistical Sources and Methods, Vol. I: Consumer Price Indices A technical guide

This volume, the first in a series of four, presents methodological descriptions of the main characteristics of national series of consumer price indices published by the ILO in the 1983 editions of the *Bulletin of Labour Statistics* and the *Year Book of Labour Statistics*. Ir is a revised, enlarged and updated version of the *technical guide 1980, Vol. 1: Consumer prices*. It contains descriptions of 158 consumer price series in respect of 146 countries.

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The columns 'Theses of the Month' and 'Research in Progress' are intended to cut out the time lag between the receipt of information and its inclusion in bibliography. Such Universities as are not sending us regular information in respect of Doctoral Theses accepted and research scholars enrolled are welcome to make use of these columns.

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RESEARCH IN PROGRESS

A list of Research Scholars Registered for Doctoral Degrees of Indian Universities

SOCIAL SCIENCES

Sociology

1. Kuriedath, Fr. Jose. *Changing patterns of authority and leadership in the Catholic community in Kerala.* U Ker, Trivandrum. Fr. Jose Murickam

2. Madhy Shyam. *Statistical tools and techniques in population studies.* BHU, Varanasi. Dr. B.N. Misra.

Political Science

1. Jagadale, Atmaram Bajirao. *Indo-Soviet relations, 1947-84.* Shivaji U, Kolhapur. Dr. K.K. Kavlekar.

2. Ramakantan, N. *Urban political process in Kerala: An empirical study of Trivandrum.* U Ker, Trivandrum. Dr. N.K. Bhaskaran.

Economics

1. Shinde, Madhukar Narayanrao. *Trends and problems of urbanisation since 1951, with special reference to Sangli, Satara, Kolhapur and Solapur Districts.* Shivaji U, Kolhapur. Dr. B.B. Kawade.

Law

1. Jaswal, Paramjit Singh. *Directive Principles jurisprudence and socio-economic justice in India.* Pb U, Chandigarh. Prof. Balram Gupta.

2. Nishtha. *Role of the Supreme Court with regard to the right to life and personal liberty with special reference to post internal emergency era.* Pb U, Chandigarh. Prof. B.K. Gupta.

Education

1. Prabhune, Ramkrishna Govind. *Tanen Gurunjonchya vangmaya shailkshnik dristhikaonatunchikitsak abhyas.* Shivaji U, Kolhapur. Dr. R. B. Devasthalee.

2. Yadav, Ajit Jagannath. *Study of hotel workers and suggest the ways and means to improve their education with special reference to Kolhapur District.* Shivaji U, Kolhapur. Dr. K.S. Gurav.

Commerce

1. Bhagwan Singh. *Role of co-operatives in tribal development: A case study of Lahaul Spiti Potato Growers Co-operative Society.* HPU, Shimla Dr, Deepak Sood.

2. Bhandari, Kamlesh Kumar D. *'Pashchimi Madhya Pradesh mein adharbhut sanrachna ke nirman mein kshetriya asantulan.* Devi Ahilya, Indore. Dr. K.G. Johari.

3. Madhu. *Evaluation of commercial bank performance relating to district credit plans.* HPU, Shimla. Dr. Kamal Nayan.

4. Malhotra, Sagar Vijay. *Determinants of equity prices in India.* HPU, Shimla. Dr. Bal Krishan.

5. Mishra, Hema. *Woman labour welfare: A study of woman labour welfare in industries in the industrial estate and industrial areas of Indore City.* Devi Ahilya, Indore. Dr. Jayantilal Bhandari.

6. Tanwar, Kuldip Singh. *Socio-economic analysis of forestry in Himachal Pradesh.* HPU, Shimla. Dr. M.K. Sharma.

7. Vashisht, Avtar Krishan. *Performance appraisal and social obligation to commercial banks in India.* HPU, Shimla. Dr. Bal Krishan.

8. Wahal, Anil. *Role of stock exchanges in augmenting the capital market in India.* HPU, Shimla. Dr. Bal Krishan.

9. Yacheshwar, Prabhu Arun. *Adoption of long range planning in Indian Commercial banking with special reference to United Commercial Bank.* Shivaji U, Kolhapur.

HUMANITIES

Language & Literature

Russian

1. Gopi, R. *Synatactic patterns in Russian and Malayalam: A contrastive analysis.* U Ker, Trivandrum. Dr. A.A. Vitlipas and Dr. A.P. Andrewskutty.

2. Panikkar, Radhadevi. *The evaluation of social activity of women in Russian literature.* U Ker, Trivandrum. Dr. A.A. Vitlipas.

History

1. Aggarwal, Dilip Kumar. *Poorvi Malwa ke prachin mandiron kee vastu tatha murti kala ka adhyayan.* HS Gour, Sagar. Dr. S.N. Manvani.

2. Chandravanshi, Horilal. *Durg Rajnandgaon jila ka puratattvik adhyayan* HS Gour, Sagar. Dr. V.D. Jha.

3. Jain, Govind Chand. *Baster ke nagvanshiya shaskon ka itihas.* HS Gour, Sagar. Dr. V.D. Jha.

4. Khan, Mohammad Shafiq. *Prachin Bharat mein apradh evam dand vyavastha; Gupta kal se Harsh Vardhan kal tak.* HS Gour, Sagar. Dr. V.D. Jha.

5. Mardin, Kirti Kumar. *Archaeology of Mandla Region.* HS Gour, Sagar. Dr. V.D. Jha.

6. Suprabha. *Digvijaya in Ancient India.* MDU, Rohtak. Dr. Silak Ram.

THESES OF THE MONTH

A list of Doctoral Theses Accepted by Indian Universities

SOCIAL SCIENCES

Library Science

1. Devadasan, F.J. *Computer based systems for generating types of subject indexes and alphabetical classarus based on deep structure of subject indexing languages.* Kar U, Dharwad.

Psychology

1. Govil, Poonam. *Effects of physical attractiveness level of repentance and suffering on juridic judgements.* Meerut U.

2. Kalpana Rao, Vallabhaneni. *Educational persuit, Cast background and psychological characteristics of students : A comparative study.* Andhra U, Waltair.

3. Nalwa, Vanit. *Effect of frontal cortical lesions on schedule-controlled behaviour.* U Delhi.

4. Shejwal, Bhaskar R. *A study of life stress and some of its personality correlates.* U Poona.

5. Srivastava, Ashok Kumar. *Organismic and environmental components of game behaviour.* Utkal U, Bhubaneswar.

Sociology

1. Bhattacharyya, Swapankumar. *Social stratification and the system of education: A study of social mobility in three generations in West Bengal.* U Calcutta.

2. Gurumurthy, U. *Panchayati raj and the weaker sections: A case study of Mysore District in Karnataka.* U Mysore.

3. Mulay, Sanjeevanee. *Health service and their impact on health in India.* U Poona.

4. Prasad, Sheela Rautray, *Determinants and correlates of the incidence of Malaria in the tropics : A study of Humid Orissa and Semi-Arid Rayalaseema.* JNU, Delhi.

5. Sheikh, Shabbir. *The muslims and family planning: Study of knowledge, attitude and practices.* Nagpur U.

6. Triphle, Madhukar Sudershan. *Social limits to occupational changes: A study of occupational and livelihood in a tribal society.* Devi Ahilya, Indore.

7. Vijayalaxmi Reddy, P. *Systems of medicine and their use in society etc.* O U, Hyderabad.

Social Anthropology

1. Mitra, Sila. *Family organisation among the Kansa baniks of Calcutta.* U Calcutta.

Social Work

1. Kumar, Hajira. *The role of grants-in-aid and voluntary welfare agencies in Delhi and Bombay: A comparative study.* JMI, Jamianagar.

2. Virupakshaiah, S. *Collective bargaining in Karnataka: An exploratory study.* Bangalore U.

Political Science

1. Chelliah, T. John Sahyam. *Kattabomman Transport Corporation in Tamil Nadu: A case study.* Gulbarga U.

2. Golam Hossain, AKM. *Bangladesh Nationalist Party: A political analysis.* U Raj, Jaipur.

3. Gupta, Sushma. *Pakistan as a factor in Indo-Iranian relations,* 1947-78. Meerut U.

4. Inder Pal. *Organization and functions of political parties in local community : A study of Meerut District.* Meerut U.

5. Joshi, Manorama. *Contribution of U Thant to the U N peace keeping operations.* U Raj, Jaipur.

6. Kendadamath, S.C. *Administrative relations in public enterprises: LIC—A case study.* Kar U, Dharwad.

7. Khan, Barkatullah. *Regional disparities and the levels of spatio-political integration in Iran.* JNU, Delhi.

8. Nema, Govind Prasad. *Prof. Herald J. Laski ke rajnitik vicharon ka adhyayan.* HS Gour, Sagar.

9. Saxena, Sada Shankar. *EEC-India development cooperation: The role of the GATT, IMF & UNCTAD.* JNU, Delhi.

10. Singh, Ram Dhyan Prasad *Pattern of democratic orientation of village leader in Bihar.* Mag U, Bodh Gaya.

11. Trilok Nath. *A study of the evolution of the political leadership of the depressed classes,* 1927-37. U Delhi.

12. Wakman, Mohammad Amin. *Non-alignment and Afghanistan foreign policy.* JNU, Delhi.

Economics

1. Jasween Jairath. *Role of irrigation in agricultural production: A case study of Panjab.* JNU, Delhi.

2. Joseph, T. Marry. *The economics of chemical industry in Kerala.* U Cochin.

3. Kulkarni, S.D. *Economics of dryland agriculture in Maharashtra with particular reference to Mandrup Project, Dist. Sholapur.* U Poona.

4. Mahajani, Mrunalini. *A study of income and employment aspect of small scale industries in Madhya Pradesh.* HS Gour, Sagar.

5. Padhy, Kishore Chandra. *History of rural development in India from* 1880-1977. Utkal U, Bhubaneswar.

6. Pathak, Jaya Krishna. *Pricing policy of manufacturing public enterprises in Nepal.* U Poona

7. Patnaik, Jyoti Prakash. *Commercial bank finance for rural development: A case study of Sambalpur District.* Utkal U, Bhubaneswar.

8. Phophalia, Ashok Kumar. *Analysis of financial statements of the vegetable oil industry in Rajasthan.* U Raj, Jaipur.

9. Rajoriya, Ram Krishna. *Sagar Jile ke laghu evam kuteer udyog vikas.* HS Gour, Sagar.

10. Sarkar, Manoranjan. *National adult education programme and the U.G.C.* Bhagalpur U.

11. Saxena, R.C. *Problems of small farmers in Rajasthan: A case study of Ajmer District.* U Raj, Jaipur.

12. Singh, A.K. *Role of commercial banks in improving the economic conditions of the weaker sections in the Bhopal Distt.* Bhopal U.

13. Waghmare, Raghunath Eknath. *Technological change and employment on sugarcane farms of Maharashtra.* MP Krishi, Rahuri.

Law

1. Gurpal Singh. *A study of the working of Probation of Offenders Act in Panjab.* Pb U, Chandigarh.

2. Varkey, A.M. *Administrative control of companies in India.* U Cochin.

Public Administration

1. Chaturvedi, Inakshi. *Civil Service under the Indian Constitution.* U, Raj, Jaipur.

2. Jain, Rajinder Kumar. *The origin, organisation and functioning of the Central Social Welfare Board.* Pb U, Chandigarh.

3. Mohinder Singh. *Rural development in Panjab: An impact study of SFDA Schemes.* U Raj, Jaipur.

4. Subbarayudu, O. *Personnel management in Indian Railways, with special reference to South Central Railway.* OU, Hyderabad.

Education

1. Bhatia, Sudarshan Kumar. *A comparative study of microteaching with and without integration training: Using additive dimension with peer supervisor feedback under simulated and real conditions.* Devi Ahilya, Indore.

2. Bindal, Vinod R. *A study of creativity in relation to experimental attitude and pupil's perception of parents attitude towards creativity.* Devi Ahilya, Indore.

3. Deshpande, Madhukar B. *An analytical study of cognitive affective development and scholastic achievement of tribal secondary, school students.* Nagpur U.

4. Dey, Basanti. *The relationship of creativiy of intelligence and academic achievement of National Rural Talent Scholarship awardees.* Utkal U, Bhubaneswar.

5. Gupta, Chhaya. *An experimental study of the correlates of teacher at secondary level.* Meerut U.

6. Krishnaswamy, Hemambujam. *A critical study of teacher education at the secondary level in Tamil Nadu.* Kar U, Dharwad.

7. Malik, Ghulam Mohiuddin. *A comparative study of first generation learners with others belonging to the same socioeconomic status in the Kashmir Valley in respect of their academic achievement and adjustment.* JMI, Jamianagar.

8. Mishra, Dhruba Charan. *Construction and standardisation of verbal group test of intelligence for the group age 12+to 15+in Oriya.* Utkal U, Bhubaneswar.

9. Nayar, Usha. *Women teachers in South Asia.* JMI, Jamianagar.

10. Nilima Kumari. *A study of relationship between socioeconomic status and conservation of number and substance in Delhi school children.* JMI. Jamianagar.

11. Onkar Singh. *Effects of mastery learning strategies on certain non-cognitive variables of high school students.* HPU, Shimla.

12. Pant, Yagya Raj. *People's participation in education: A socio personal study of village communities of Nepal.* Pb U, Chandigarh.

13. Patel, H.S. *A study of role perspective of the primary teachers in relation to their psychological characteristics.* SPU, Vallabh Vidyanagar.

14. Saxena, M.B. *A study of the influence of some selected aspects: School learning environment of student characteristics.* Bhopal U.

15. Saxena, Anil Kumar. *Attitude towards physics and cognitive preference styles among different groups of science students.* U Raj, Jaipur.

16. Sharma, Harcharan Lal. *A critical study of the development of school science education in India from* 1947-77. JMI, Jamianagar.

17. Shyam Sunder. *An investigation into the problems of absenteeism in Delhi schools.* JMI, Jamianagar.

18. Soni, Jagdish Chander. *A study of moral judgment in school going children of rural area of Delhi belonging to different castes and sexes.* JMI, Jamianagar.

19. Soundaravalli, S. *A critical study of the education functioning of the vocational stream in higher secondary schools in Tamil Nadu.* Kar U, Dharwad.

20. Srivastava, Rajendra Prasad. *An investigation into the relationship of reading ability with general mental ability, sociocultural status and school achievement.* JMI, Jamianagar.

Commerce

1. Agarwal, Ram Krishna. *Rashtriya Sarak Parivahan; Sangathan sambhavnayen aur bhawishya, Madhya Pradesh ek vishesh adhyayan.* HS Gour, Sagar.

2. Bhatia, Jawahar Lal. *Inventory management in textile mills in Delhi, Panjab and Rajasthan.* U Delhi.

3. Mittal, Anil Kumar. *Indo-FRG economic co-operation: A study.* Meerut U.

4. Muneesh Kumar. *International transfer of technology to India: A comparative study of American and Japanese collaborations.* U Delhi.

5. Nadgauda, Shrikant P. *Incentive schemes in selected large-scale industries in and around Pune.* U Poona.

6. Raman. A.V. *Working capital management in selected state road transport undertakings,* U Poona.

7. Shaligram, A.Y. *Lending operations of the Urban cooperative banks in Maharashtra before and after the applications of the Banking and after Regulations Act,* 1940 *with special reference to the Urban Banks functioning in Pune City.* U Poona.

8. Vinod Kumar. *Profitability of private commercial banks in India since* 1969. Meerut U.

9. Yadav, Ram Avtar. *Financial ratios and the prediction of corporate failure: A study of Indian Companies.* U Delhi.

Home Science

1. Patil, Jyotsna A. *Evaluation of the food habits and nutritional status in population of some selected tribal villages around Deolapar Dist.* Nagpur U.

Management

1. Jayashankar, R. *Distribution of refinery products in India.* U Delhi.

2. Srivastava, Surya Kumar. *Relationship between job satisfaction and organizational climate : A comparative study of private and public sector.* U Roorkee.

UNIVERSITY OF DELHI

Advt. No. Estab. IV/97/85 Dated the 22nd January, 1985.

Applications on prescribed form are invited for the following posts:

	DEPARTMENT	DESIGNATION
1	Delhi University Sports Council	One Director of Physical Education
2	Central Office	One Information Officer
3.	Hindi	(i) One Reader (For South Delhi Campus) (ii) Two Lecturers (One Temporary upto 5-12-1986)
4.	Urdu	One Lecturer
5.	Botany	(i) Two Lecturers (ii) One Research Associate
6.	Campus Law Centre	One Reader
7.	University Services & Instrumentation Centre	(i) *One Technician 'C' (Glass Blowing) (ii) *One Technician 'C' (Carpenter)

Scale of Pay of the posts are :

Director of Physical Education/Reader	Rs. 1200-50-1300-60-1900
Information Officer	Rs. 1100-50-1600 (There is a possibility of the scale of the post being revised to Rs. 1200-1900).
Lecturer	Rs. 700-40-1100-50-1600.
Research Associate	A—Rs. 1400/-p.m. B—Rs. 1600/-p.m. C—Rs. 1800/-p.m. D—Rs.2000/-p.m. On the recomendation of the Selection Committee.
Technician 'C' (Class Blowing/Carpenter)	Rs. 380-12-500-EB-15-560.

All posts, except that of Research Associate carry D.A., C.C.A. and H.R.A. as admissible under the rules in force in the University from time to time.

A Research Associate once appointed to a particular point will get an annual increment of Rs. 100/- p.m. subject to the total emoluments including increments not exceeding Rs. 2,000/- per month. The value of contingency will be Rs. 5,000/- per annum

Essential Qualifications for:

Director of Physical Education

(i) Master's degree in Physical Education (High Second Class) with a diploma in sports coaching from a recognised Institution.

OR

A Master's degree in Physical Education (High Second Class) with a record of having represented his University at the Inter-University level/state in the National Championship.

(ii) Minimum experience of ten years in organising games and sports (as exemplified in handling of about half a dozen teams in a year in his institution and their participation in University/Inter-Collegiate Tournaments) and ability to encourage mass participation in games and sports.

Information Officer

A Second Class Master's Degree with Diploma in Journalism and at least eight years experience of Journalism and publications/Public relations work.

Readerships

Good academic record with at least Second Class Master's degree in a relevant subject with a doctoral degree or equivalent published work. Evidence of being actively engaged in (i) research, or (ii) innovation in teaching methods or (iii) production of teaching materials.

Five years' experience of teaching in under-graduate/post-graduate classes and/or post-doctoral research work with evidence of published work.

Note : Second Class would mean at least 50% marks in the subject or equivalent grade.

Lecturers

(a) A Doctorate's degree or research work of an equally high standard; and

(b) Good academic record with at least second class (C in the seven point scale) Master's degree in a relevant subject from an Indian University or an equivalent degree from a foreign University.

Having regard to the need for developing interdisciplinary programmes, the degree in (a) and (b) above may be in relevant subjects.

Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may relax the requirement of "at least Second Class in Master's degree examination" in terms of level achieved at the said examination as prescribed in (b) above.

Provided further that if a candidate possessing a Doctor's degree or equivalent Research work is not available or is not considered suitable, a person possessing a good academic record, (weightage being given to M.Phil or equivalent degree or research work of quality) may be appointed on the condition that he will have to obtain a Doctor's /M.Phil degree or give evidence of research of high standard within eight years of his appointment, failing which he will not be able to earn future increments until he fulfils these requirements

Explanation

1. For determining "good academic record" the following criteria shall be adopted:—

(i) A candidate holding a Ph.D./M.Phil. degree should possess at least a second class Master's degree; or

(ii) A candidate without a Ph.D./M.Phil degree should possess a High second class Master's degreea nd second class in the Bachelor's degree; or

(iii) A candidate not possessing Ph.D./M.Phil degree but possessing second class Master's degree should have obtained first class in the Bachelor's degree.

2. Persons having secured at least 55% marks or more shall be deemed to have passed the examination in the high second class.

Research Associate

Consistently Good academic record with first or high second class (B+) Master's degree or an equivalent degree of a foreign University in the subject concerned.

Note

Initial appointment will be for a tenure period of 3 years, extendable by another 2 years only. In no case the tenure will extend beyond 5 years in all.

Technician 'C' (Glass Blowing)

Matric with 4 years experience in the

Glass Blowing Workshop. The candidate should have handled various types of Glass Blowing Equipments.

Technician 'C' (Carpenter)

Certificate course i.e. I.T.I. in carpentry Trade with 7 years experience.

Special/Desirable Qualifications For: Lectureship in Urdu

Teaching experience: at least 2 years of Post-Graduate Classes.

Preferential : Experience of Translation.

The prescribed application forms can be had from the Information Section of the University either personally or by sending a self-addressed envelope (size 13cm × 28cm) with postage stamps worth Rs. 3.45 P.

The candidates will have to produce the original documents relating to their age, qualifications, experience etc. at the time of interview.

Applications (separate for each post) accompanied by attested copies of Degrees, other certificates, marksheets published research articles, etc. should be addressed to the Registrar. However, applications for the posts marked asterisk (*) should be sent directly to the Head of the Department concerned. The last date prescribed for receipt of the applications is **16-2-1985.**

Note

1. It will be open to the University to consider the names of suitable candidates for teaching posts who may not have applied. Relaxation of any of the qualifications may be made in exceptional cases, in respect of all the posts on the recommendations of the Selection Committee
2. Canvassing in any form by or on behalf of the candidates will disqualify
3. Candidates for teaching posts only from outside Delhi , when called for interview will be paid to and fro single second class rail fare.
4. The University reserves the right not to fill up any of the vacancies advertised if the circumstances so warrant.

Madan Mohan
REGISTRAR

ANNA UNIVERSITY

MADRAS-25

Advertisement No. 27719/L3/84
Dated 8-1-1985

Applications in the prescribed form are invited for the following posts in this University. Application form, details of qualification prescribed and other particulars can be had from the Registrar, Anna University, Madras-25 on application accompanied by a crossed Indian Postal Order for Rs. 5/- (Rupees five only) dated not earlier than 8-1-85 drawn in favour of the Registrar together with a stamped self addressed envelope (Rs. 1.50) of size 22× 10cm.

1. **Professors** (4) (Four).

Chemical Engineering (1), Textile Technology (2), Management (1).

Scale of Pay : Rs 1500-60-1800-100-2000-125/2-2500.

2. **Assistant Professors/Readers** (29) (Twentynine)

Remote Sensing (1), Civil Engineering (1), Soil Mechanics (1), Urban and Transport (1), Environmental Engineering (2), Production Engineering (2), Industrial Engineering (3), Computer Science (5), Applied Electronics (1), Communication Systems (3), Electronics Engineering (2), Computer Centre (1), Chemical Engineering (4), Textile Technology (1), Management (1).

Scale of Pay : Rs. 1200-50-1300-60-1900.

3. **Lecturers** (13) (Thirteen)

Traffic and Urban Transport (1), Public Health Engineering (1), Industrial Engineering (1), Computer Science (3), Communication-Systems (2), Management (2), Sanitary Chemistry/Microbiology (1), Computer Centre (1), Electronics Engineering (1).

Scale of pay : Rs. 700-40-1100-50-1600.

4. **Systems Assistant** (1) (One)

Scale of Pay : Rs. 700-40-1100-50-1300.

5. **Senior Scientific Officer** (1) (One)

(Mechanical Engineering in the field of Thermal Engineering)

Scale of Pay : Rs. 1500-60-1800-100-2000-125/2-2500.

6. **Project Engineer** (1) (One)

(Mechanical Engineering in the field of Thermal Engineering)

Scale of Pay : Rs. 700-40-1100-50-1600.

7. **Research Associate** (1) (One)

(Mechanical Engineering/Electrical Engineering/Chemical Engineering).

(Rs. 1000/- per month consolidated).

In addition to pay D.A., A.D.A., H.R.A. and C.C.A. are admissible at the rates in force from time to time.

Request for application form, details of qualifications, field of specialisation prescribed and other particulars will be entertained upto 15-2-1985.

Last date for receipt of completed application is **20-2-1985.**

REGISTRAR

PUNJABI UNIVERSITY

PATIALA

(Advertisement No./PRO/Estt./Jan. 1985)

Applications are invited for the following posts:—

1. **Professor in Sri Guru Granth Sahib Studies : (One)**

(Grade Rs. 1500-60-1800-100-2000-125/2 2500)

Qualifications

An eminent scholar with published work of high quality actively engaged in research. About ten years experience of teaching and/or research. Experience of guiding research at doctoral level.

OR

An outstanding scholar with established reputation who has made significant contribution to knowledge.

2. **Reader in Sri Guru Granth Sahib Studies: (One)**

(Grade Rs. 1200-50-1300-60-1900).

Qualifications

Good academic record with a doctoral degree or equivalent published work. Evidence of being actively engaged in (i) research or (ii) innovation in teaching methods or (iii) production of teaching materials.

About five years' experience of teaching and/or research provided that atleast three of these years were as Lecturer or in an equivalent position.

This condition may be relaxed in the case of candidates with outstanding record of Teaching/Research

3. **Medical Officer (Female) : (One)**

(Grade Rs. 940-30-1000-40-1200/50-1400/60-1700-75-1850+N.P.A. as per Government rates).

Qualifications

(i) M.B.B.S. with atleast two years experience in a recognised Hospital, D.G.O./M.D. shall be preferred.

(ii) Registered with the Punjab Medical Council or with any other duly constituted Medical Council in India.

(iii) Medical Officer will be provided with free unfurnished accommodation at the Campus, subject to availability.

(iv) Working knowledge of Punjabi Language.

Note

Persons those have already applied in response to earlier advertisement for this post and fulfil the condition of qualifications etc. need not apply again.

General

Candidates for teaching & research posts should possess working knowledge of Punjabi upto Punjabi Parveshka standard. Persons from outside Punjab could however be considered for appointment but they will be required to give an undertaking in writing that they will acquire the requisite qualifications in Punjabi within a period of two years.

Higher start within the grade admissible depending upon the ability and experience of the candidate. House rent and Dearness allowance, Provident Fund and Medical facilities according to University rules.

Applications complete in all respects on the prescribed forms accompanied by a crossed Postal Order worth Rs. 5/- (Rs. 2/- for candidates belonging to Scheduled Castes/tribes & Backward Classes) drawn in favour of the Registrar, Punjabi University, Patiala, should reach the University by **8-2-1985.** The forms can be had from the Head, Publication Bureau, Punjabi University, Patiala on payment of Re. 1/- by sending a crossed Indian Postal Order drawn in favour of the Registrar, Punjabi University, Patiala alongwith a self addressed envelope of the size of 25× 10cms. stamped with Rs. 1.70 postage for Prof./Readers post and Re. 0.50 (for the post of Medical Officer) which should be superscribed at the top in bold letters REQUEST FOR APPLICATION FORM FOR THE POST OF————.

Persons already in service should apply through proper channel. Those who are not in a position to submit their applications through proper channel before the due date should submit an advance copy before the due date and regular applications through proper channel by **20-2-1985.**

D.S. Kang
REGISTRAR

ANNAMALAI UNIVERSITY
ANNAMALAINAGAR

DIRECTORATE OF CORRESPONDENCE COURSES AND CONTINUING EDUCATION

APPLICATIONS are invited in the prescribed form for filling up the following posts. Application forms can be had from the undersigned on payment of Rs. 10/- each (not refundable) by cash/money order/postal order. Applications (with 5 additional copies) should reach the undersigned on or before **11th February 1985**.

Sl. No.	Name of the post	Number of post
1.	Professor of Commerce	1
2.	Professor of Mathematics	1
3.	Professor of Physics	1
4.	Professor of Chemistry	1
5.	Professor of Zoology	1
6.	Professor of Education	1
7.	Reader in Economics	1
8.	Reader in Zoology	1

Scale of pay:

Professor : Rs. 1500-60-1800-100-2000-125/2-2500 with usual allowances.

Reader : Rs. 1200-50-1300-60-1900 with usual allowances.

Note

A higher start in the above scales will be given to deserving candidates, keeping in view their experience and special merits.

Qualifications

Professor

A person with a distinguished academic record with Doctoral Degree and with 10 years experience of teaching at the Post-Graduate level and of guiding research at the Doctoral level with publications of high quality to his credit.

OR

An eminent scholar with published work of high quality actively engaged in research. Ten years' experience of teaching and/or research. Experience of guiding research at the Doctoral level.

Reader

A person with a good academic record with Doctoral Degree or equivalent published work. Evidence of being actively engaged in (i) Research or (ii) Innovation in teaching methods or (iii) production of teaching materials

About 5 years' experience of teaching and/or research provided that atleast three of these years were as Lecturer or in an equivalent position.

This condition may be relaxed in the case of candidates with outstanding research work.

Such of those as are already in service should route their applications through the proper channel.

A.R. Lakshmanan
REGISTRAR

INDIAN INSTITUTE OF SCIENCE
BANGALORE-560012

Advertisement No. R(IA)308-5/85
Dated 17th January 1985

Applications in the prescribed form are invited for the post of SENIOR SCIENTIFIC OFFICER (ONE POST) in the Microbiology and Cell Biology Laboratory at the Institute in the grade Rs. 1100-50-1300-60-1600, plus allowances at Central Government rates prevailing at the Institute from time to time, Emoluments at the minimum of the scale total to Rs. 2485/- per month excluding House Rent Allowance. HRA maximum payable is 15% of pay or on a flat rate of Rs. 159.75 per month.

Qualifications and Experience

Essential

A Ph.D. degree in cell biology/plant sciences/microbiology with atleast 10 years of post doctoral experience as evidenced by publications.

Extensive experience in plant tissue culture with specialization in clonal propagation of plants.

Desirable

Experience in organising a plant tissue culture facility initiating and developing research programmes towards understanding basic and applied aspects of plant cell growth and differentiation.

Job Description

The selected candidate will be required to undertake original research work to teach postgraduate students, to guide them in their research work and to discharge any other duties that may be assigned from time to time.

Relaxation

The stipulation regarding qualifications and the number of years of relevant experience is relaxable at the discretion of the competent authority in the case of candidates possessing exceptionally good record and outstanding capabilities.

Tenure of Appointment

Normally, all new appointments at the Institute are made on contract for periods of five years including an initial probationary period of one year. If, at the end of the first contract, the work and progress of the candidate is found satisfactory, the Institute may consider offering a continuing appointment till the age of superannuation, i.e. 60 years.

General

Application forms (six copies) can be obtained from the Registrar, Indian Institute of Science, Bangalore 560012, on requisition. Each request for application forms should be accompanied by a Crossed Indian Postal Order for Rs. 5/- (non-refundable) made payable to the Registrar, together with a self-addressed stamped (Rs. 3.30) envelope of the size of 28cms × 18cms. The payment of application fee is exempted in the case of candidates belonging to Scheduled Castes/Scheduled Tribes on production of certificate from a competent authority.

The last dates are:

(a) For issue of application forms : **16-2-1985.**

(b) For receipt of completed application forms : **5-3-1985.**

Applicants in the service of Government, quasi-Government, Government-aided or similar institutions should apply through proper channel. Otherwise, their applications will not be considered.

It shall be open to the Selection Committee for a higher post to recommend a person for a lower post if a suitable candidate for the higher post is not available.

Due consideration will be given to candidates who are physically handicapped provided they are academically/scientifically sound and well qualified and generally comparable to others.

Higher starting salary may be considered to candidates with exceptional merit.

Kindly quote the advertisement No. and date in all correspondence. Candidates should ensure that applications are complete in all respects.

Detailed terms and conditions of appointment will be supplied along with the application forms.

T. Nanjunda Rao
REGISTRAR

JADAVPUR UNIVERSITY

CALCUTTA-700032.

Dated : 9-1-1985

Employment Notification No. A2/C/1/85

The University invites applications in the prescribed form for the following posts:—

1. Professor : Geological Sciences—One post
2. Reader : Geological Sciences—One post.
3. Lecturer : Electronics & Telecommunication Engineering—Ten posts.

Qualifications for Professor Post

Essential

An eminent scholar with published work of high quality actively engaged in research. About ten years' experience of teaching and/or research. Experience of guiding research at doctoral level.

OR

An outstanding scholar with established reputation who has made significant contribution to knowledge.

Specialisation

Should be one of the following :

Coal Geology; Engineering Geology; Sedimentology; Ore Geology; Metamorphic Petrology.

Qualifications for Reader Post

Essential

Good academic record with a doctoral degree or equivalent published work. Evidence of being actively engaged in (i) research or (ii) innovation in teaching methods or (iii) production of teaching materials.

About five years' experience of teaching and/or research provided that at least three of these years were as Lecturer or in an equivalent position.

This condition may be relaxed in the case of candidates with outstanding record of teaching/research.

Explanation

For determining 'good academic record' the following criteria shall be adopted:

(i) A candidate holding a Ph.D. degree should possess at least a second class Master's degree; or

(ii) A candidate without a Ph.D. degree should possess a high second class Master's degree and second class in the Bachelor's degree ; or

(iii) A candidate not possessing Ph.D. degree but possessing second class Master's degree should have obtained first class in the Bachelor's degree.

Desirable

Palaeontology will be preferred.

Specialisation

Should be any of the following:

Coal Geology; Hydrogeology-Geothermics; Structural Geology; Sedimentology; Igneous Petrology/Experimental Petrology; Palaeontology; Ore Geology.

Qualifications for Lecturer Post

Essential

Master's degree in appropriate field in Engineering/Technology.

(ii) Good academic record with a Bachelor's degree in Engineering/Technology. First Class at Bachelor's degree and/or Master's degree level;

(iii) One year's relevant professional experience outside academic/research institutions.

Having regard to the requirements of emerging fields of Engineering and of developing interdisciplinary programmes, the requirements of Engineering/Technology degrees may be waived in the cases of otherwise well qualified candidates.

Provided further that if a candidate does not possess professional experience or a person possessing such experience is not found suitable, the person appointed will be required to obtain desired professional experience within a period of eight years of his appointment failing which he will not be able to earn future increments, until he fulfils these requirements.

Wherever candidates with M. Tech./M.E. qualifications are not available or M.Tech./M.E. candidates are not found suitable for appointment, the essential qualification may be relaxed and the institution may appoint First Class Engineering Graduates against the post of Lecturers. Such relaxation will, however, be subject to the condition that the candidates concerned shall have to obtain the M. Tech./M.E. degree within a period of five years. Those candidates who fail to obtain the M. Tech./M.E. degree within the stipulated period of five years shall not be entitled for drawing their increments due unless they acquire the prescribed qualification.

Definition of the term 'good academic record' for the posts of Lecturer

(i) A candidate holding a Ph.D. degree should possess at least a second class Master's degree;

(ii) A candidate without a Ph.D. degree should possess a high second class Master's degree and second class in the Bachelor's degree;

(iii) A candidate not possessing Ph.D. degree but possessing second class Master's degree should have obtained first class in the Bachelor's degree.

Specialisation

Electronics and Telecommunication/Instrumentation/Computer Science and Engineering.

Scale of Pay

Professor : Rs. 1500-60-1800-100-2000-125/2-2500/-.

Reader : Rs. 1200-50-1300-60-1900/-.

Lecturer : Rs. 700-40-1100-50-1600/-.

Last date of receiving application is **9-2-1985.**

Application forms are obtainable from the University office during working hours on payment of Rs. 2/- or by post on payment of Rs. 2/-+Re. 1/- as postal charges. No travelling allowance is admissible to candidates called for interview. Higher initial salary may be given to really deserving candidates. Those who are in employment should submit their applications through proper channel. Candidates are requested to submit separate sets of (8 copies each) applications in prescribed form for each post indicating specialisation where they intend to apply for more than one post. Choice of the Appointment Committee will not necessarily be confined to applicants only. Canvassing in any form will disqualify a candidate.

REGISTRAR

UNIVERSITY OF POONA

GANESHKHIND, PUNE-411007

Advertisement No. 28/85

Dated : January 21, 1985

REQUIRES

PROFESSOR

(Namdeo Chair)

General Qualifications

An eminent scholar with published work of high quality in the subject. Actively engaged in research. About ten years' of teaching and/or research experience. Experience of guiding research at doctoral level.

OR

An outstanding scholar with established reputation who has made significant contribution to knowledge.

Special Qualifications

The applicant must be an eminent person well-versed in research work of the Sant Namdeo's Literature in Marathi and Hindi. He should be an eminent scholar of Sant Literature and must have published his work at the said subject.

Age Limit

Applicant's age should be beyond 40.

Scale

Rs. 1500-60-1800-100-2000-125/2-2500 plus admissible allowances. Higher salary may be given if the applicant has special merits. Initially the appointment will be for a period of three years on contract basis.

Application form for the above post is available in person for Rs. 10/- in cash or by sending self-addressed envelope (23cms×20cms) stamped for Rs. 2.25 and Postal Order of Rs. 10/- to the Registrar. Apply **on or before 23-2-1985.**

S.P. Bhosale
REGISTRAR

SRI SATHYA SAI INSTITUTE OF HIGHER LEARNING
(Deemed University)
PRASANTHINILAYAM-515134
(A.P.)

Applications for the following posts in the departments noted are invited. Posts will carry U.G.C. Scale of Pay. Dearness and House Rent Allowance will be paid according to Institute Rules.

Minimum Qualification

For Professor : Ph.D. with 10 years teaching experience.

For Reader : Ph.D. with 5 years teaching experience.

For Lecturer : Ph.D. with 2 years teaching experience. (Condition regarding minimum experience in this category is relaxable)

Post-doctoral Fellowship : A few positions of senior Research Fellowships are available. Persons with Doctorate qualification and research experience will be considered. The Fellowships will be normally tenable for a period of three years. The fellowships will carry a consolidated salary of up to Rs. 2,000/-p.m. Persons who do good research work will be considered for regular positions in the Institute on completion of one or two years.

Prasanthinilayam Campus: (For Men)

1. Department of Mathematics

Professor — 1
Reader — 1
Lecturer — 1

Areas of Specialisation

Professor : Functional Analysis/Operation Research with background of Numerical Analysis/Topology/Modern Algebra and Statistics.

Reader : Statistics and Operation Research.

Lecturer : Computer Science. M.Tech. (Computer Science) can also apply.

2. **Department of Physics**

Readers — 2
Lecturers — 2

Areas of Specialisation

Reader : Theoretical Physics/Molecular Physics/Solid State Physics/Modern Optics and Lasers.

Lecturer : Theoretical Physics (with emphasis on Mathematical methods)/ Optics and Spectroscopy/Material Science.

Research Fellow : Optics (Fibre Optics and/or Holography.

3. **Department of Chemistry**

Readers — 2
Lecturers — 2

Areas of Specialisation

Reader/Lecturer : Inorganic/Analytical/Physical/Theoretical/Bio-chemistry.

Research Fellow : Natural Products.

4. **Department of Bio-Sciences**

Readers — 2
Lecturer — 1

Areas of Specialisation

Reader : Environmental Biology/ Histophysiology/Histopathology/ Micro-biology/Hematology/Plant Physiology.

Lecturer : Plant Physiology/Systematic Botany.

Research Fellow : Hematology/Environmental Biology.

5. **Department of History & Indian Culture**

Professor — 1
Reader — 1
Lecturer — 1

Areas of Specialisation

Professor, Reader, Lecturer: Theory of Yoga with basic degree in Psychology or Philosophy/Modern History/Ancient History and Archaeology.

6. **Department of Commerce**

Professor — 1
Reader — 1
Lecturers — 3

Areas of Specialisation

Professor, Reader, Lecturer : Management Accounting/Accounts and Finance/Statistics and Quantitative Analysis/Bank Management.

7. **Department of Philosophy**

Professor — 1
Reader — 1
Lecturers — 2

Areas of Specialisation

Professor, Reader, Lecturer : Indian Philosophy/Comparative Philosophy/ Western Philosophy/Comparative Religions/ Philosophy of Science/Mysticism/Axiology/Aesthetics/Ethics/Metaphysics/Philosophic systems and Methodologies

8. **Department of Sanskrit**

Professor — 1
Lecturers — 2

Areas of Specialisation

Professor : Vedanta Sastra/Alankara Sastra

Lecturer : Tarka Sastra/Vyakarna.

9. **Department of English**

Professor — 1
Reader — 1
Lecturers — 2

Areas of Specialisation

Professor, Reader Lecturer: English Literature/American Literature/Commonwealth and Indian English Literature. General Lingusitics with reference to English/Phonetics of English/Grammar and usage of English/Principles of teaching English as second Language.

Non-Teaching Posts: Prasanthinilayam Campus (Men)

1. Statistician—One.

Qualification : First Class or High Second Class M.Sc. Statistics.

Scale of Pay : 700-40-1100-50-1300.

2. Stenographers—English (Two)

Qualification : Speed 120 w.p.m. in Shorthand and 40 w.p.m. in typewriting.

Scale of Pay : 575-20-775-25-950.

Anantapur Campus (For Women)

1. **Department of English Language & Literature**

Reader — 1
Lecturer — 1

Areas of Specialisation : Same as for Prasanthinilayam Campus.

2. **Department of Telugu**

Professor — 1
Lecturer — 1

Areas of Specialisation

Professor : Telugu Literature. Ph.D. in Telugu.

Lecturer :Sr. Diploma in Linguistics with reference to Telugu will be preferred.

3. **Department of Sanskrit**

Lecturer — 1

Area of Specialisation : Any branch.

4. **Department of Mathematics**

Lecturer — 1

Area of Specialisation : Applied Mathematics.

5. **Department of Philosophy**

Reader — 1
Lecturer — 1

Area of Specialisation : Same as for Prasanthinilayam Campus

6. **Department of Home Science**

Professor — 1
Reader — 1
Lecturers — 2

Areas of Specialisation

Professor : Food and Nutrition
Reader : Child Development.
Lecturer : Home Management/Textiles

The Institute is committed to carrying out R&D work adopting inter-disciplinary and cross-disciplinary approach. Hence the candidates applying for the various positions must have the aptitude to work in a team of inter-disciplinary nature.

Apply to the Registrar for prescribed application form before 20-2-1985, stating departments.

Filled in application forms complete in all respects should reach the Registrar along with a crossed I.P.O. or Bank Draft for Rs. 20/- on State Bank of India, Prasanthinilayam, before **20th March 1985**.

Candidates for the posts of Statistician and Stenographers can apply on plain paper with complete bio-data and Rs. 20/-. I.P.O. or Bank Draft.

REGISTRAR

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University News

FEBRUARY 8, 1985

Re. 1.00

G.D. 52

Dr. P. V. Salvi, President, Indian Agricultural Universities Association (IAUA) and Vice-Chancellor, Konkan Krishi Vidyapeeth, speaking at the 13th Convention of IAUA on January 4, 1985. Others seen (from left) are : Shri Kripa Narayan, Secretary, IAUA, Dr. Shanker Dayal Sharma, Governor of Andhra Pradesh and Shri B. Pratap Reddy, Vice-Chancellor of A. P. Agricultural University.

CLASSIFIED ADVERTISEMENTS

KUMAUN UNIVERSITY
NAINITAL

Applications for the following posts are invited by 16 March, 1985 on the prescribed form obtainable from the Registrar, Kumaun University, Nainital-263001, U.P., by sending a self-addressed 9″× 6″ envelope. Please enclose a crossed Postal Order/Bank draft of Rs. 5/- payable to the Finance Officer, Kumaun University, Nainital for postal charges etc. (Money order is not acceptable). Candidates who have already applied in response to the advertisement No. 770 dated 9-8-84 for the post of Lecturer Economics need not apply again. They may, however, send the latest addition to their qualifications, change of address etc.

Sl. No.	Department	Professor 1500-2500	Reader 1200-1900	Lecturer 700-1600	Specialization
1.	Law	—	1 TLR	—	—
2.	Physics	—	—	1 LV	—
3.	Education	1 R	—	1 LV	—
4.	Sanskrit	—	—	1 LV	—
5.	Geography	—	—	1 R	**Desirable :** Spatial organization and planning or Physical Geog.
6.	History	1 TLR	1 TLR	—	—
7.	Economics	1 R	—	3 { 1 R 2 TLR	—
8.	Hindi	—	1 TLR	—	—

Note : R, implies regular, TLR, implies temporary likely to be regular, LV, leave vacancy.

Qualifications

1. For the post of Lecturers

(a) a doctorate degree or research work of an equally high standard in relevant subject, **and**

(b) consistently good academic record with first or high second class master's degree or an equivalent degree of a foreign university in relevant subject.

2. For Readers

(i) Good academic record with a doctorate degree or equivalent published work, and active engagement in research or innovation in teaching methods or production of teaching materials; **and**

(ii) Five years experience of teaching or research including at least three years as lecturer or in equivalent position.

3. For Professors

Either—Eminent Scholar with published work of high quality and active engagement in research and ten years experience of teaching or research and experience of guiding research at doctorate level;

OR Outstanding scholarship with established reputation for significant contribution to knowledge.

Further details regarding qualifications, service terms and permissible relaxations in qualifications will be provided with the application forms. Preference will be given to SC/ST and disabled candidates if otherwise considered suitable by Selection Committee. Application form will not be sent by post after **1-3-1985.**

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OR

Outstanding scholar with established reputation having made significant contribution to knowledge.

READERS (3)

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*Physics : 1

Grade : Rs. 1200-1900
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*Physics : 1

Defence Studies : 1 Geography

*History : 1 West Asia/Far East

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AND

(b) Good academic record with at least Second Class (C in the seven point scale) Master's degree in the subject.

For developing Interdisciplinary Programmes, degrees in (a) and (b) above in relevant subjects.

*Posts marked asterisk are reserved for candidates belonging to SC/ST/NT and VJ. If the persons are not selected against Reserved Category posts, the persons from open category will be appointed on temporary basis upto the end of particular academic year only.

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REGISTRAR

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Editor :
M. S. RAMAMURTHY

XIII Convention of IAUA

The Governor of Andhra Pradesh, Dr. Shankar Dayal Sharma, urged Indian Agricultural Scientists to help solve the food problem in third world countries where millions of people were starving due to drought conditions, while inaugurating the 13th Convention of the Indian Agricultural Universities Association (IAUA) at the Andhra Pradesh Agricultural University main campus, Rajendranagar, Hyderabad on January 4. Dr Sharma said that while India could produce more foodgrains and supply them to the needy African and other countries, Indian Scientists should deem it their responsibility to provide the know-how to these countries in the field of agriculture.

The Governor said, the multipurpose projects visualised by Jawaharlal Nehru coupled with the work of scientists had helped India become self-sufficient in food. India was now in a position to supply improved seeds to other countries. However, scientists should devote attention to solving some of the pressing problems that the country was facing such as salinity of land, dryland cultivation and water management. Whatever the scientists undertook must be for the benefit of the common rural people.

He suggested the exchange of professors and video cassette recordings by Agricultural Universities in the country so that they could benefit by original research work being done in the different farm universities. He pleaded for the popularisation of rural games by Agricultural Universities.

In his address, Dr. P.V. Salvi, President of the IAUA and Vice-Chancellor, Konkan Krishi Vidyapeeth, said Vice-Chancellors and other officials of the 23 Agricultural Universities attending the two-day convention would discuss a report of the committee constituted by the Indian Council for Agricultural Research for improving the course content in respect of agricultural, animal science, agricultural engineering, home science, among other subjects taught in farm universities.

The idea was to have curricula that would enable students to acquire knowledge, skills and attitudes useful for promoting agricultural development.

Dr. Salvi said while there was need for providing more funds to Agricultural Universities, in view of their increased activities, and price escalation, these universities could themselves also enhance their income by maximising production in their farms.

He said the Agricultural Universities should intensify research regarding drainage, optimum use of irrigation water and dryland farming. Suitable technology was needed to improve substantially the productivity of dryland cultivation. He also emphasised the need for stepping up the output of pulses and oilseeds which were in short supply.

Dr. Salvi called for research in all areas affecting rural people. "The Agricultural Universities have to become effective instruments for bringing about desirable changes in rural society leading to its improved welfare" he said and added that appropriate technology should be developed to suit the farm and home situations of the lower income group and the under priviliged.

Shri Pratap Reddy, Vice-Chancellor, Andhra Pradesh Agricultural University, welcoming the gathering said unless we secure capabilities of exporting huge agricultural supplies to a number of countries, we would not be able to raise the living standards of the farmers and the people living in rural areas. He also emphasised that the convention should strive to achieve uniformity in formulating policies to that effect.

Shri Kirpa Narain, Secretary of the Indian Agricultural Universities Association, proposed a vote of thanks.

Management and Financing of Higher Education

K. N. Bhatnagar*

There are four main approaches of Management in an organisation viz. Scientific Management based on the principles of bureaucracy (1810-1935) as propounded by Weber, Taylor and others, Human Relations Approach propounded by Dickson, Social Science Approach (they are also known as classical approach) and the modern theory of Management viz., the Integrated (Situational) 'Systems' Approach propounded by Perrow Tompson and others.

The principles of Management apply equally well to Educational System. Systems approach, in particular, cautions the Manager to be wary of the bureau-pathology & technocracy inherent in traditional management and to look at the organization as a dynamic interacting and yet rational subsystem with a more global system. The position being so, we cannot just sit outside the system and go on criticising it, as we are also part and parcel of the same system.

Very few educational administrators in the Universities and Colleges within India or abroad have ever given thought to the management side. Even the most respectable universities, in fact, do not know where their resources are actually going and with what results. The position is no better in foreign universities. Public on the other hand, all over the World demands that Education must satisfy its cost. Even in the more developed countries, higher education faces recessionary economies, a shrinking pool of students, diminishing budget and escalating costs.

Research in the Economics of Education is a very recent concept in origin. It is a new branch of Economics, developing a theory of 'Human Capital' in which education is seen as an investment, whose returns could be measured in terms of cost benefit analysis.

A case study of a prestigious college of the Delhi University had revealed that in terms of whole year the number of lectures taken per teacher worked out 100 to 132 as against 540 that should be. The cost per lecture, therefore, rose from Rs. 33 to Rs. 155. The loss was further augmented with 46% drop-outs. In other words, out of the total budget of Rs. 26 lakh in 1975-76, Rs. 11 lakhs were wasted in terms of productivity. The position today is no better.

The university today has evolved itself into mega-bureaucracy typified by internal structural differentiations and the system is perpetually under threats of disorganisation. A modern university has to function in highly amorphous and fleeting conditions of turmoils, upheavals and conflicts. At the same time it has to transmute and transvaluate and not destroy its former role. The Central University Report says — 'the universities are in a state of perpetual crisis and are faced with problems some of which are beyond their competence to solve.'

As Katz and Khan, however, say university by its very fundamental character generates conflicts. While a modern university is a functional polyarchy, interpersed with numerous Committees of unifunctional & multi-functional nature which operate in a dialectical fashion of balance, imbalance and rebalance, it is currently developing, on the other hand, new patterns of response to new challenges for better system adoptation and maintenance.

So far as the financial side is concerned it is not easy to understand the rising unit costs in the past 50 or 100 years as Harris says even when allowance is made for inflation and rising wage-scales. Undoubtedly, the product improves though the relation of output to input is not easily measured. Solow in 1957 damonstrated that gross output per man doubled with 87.5% of the increase attributable to technical change and 12.5% to increased use of capital. Unit cost, that is cost per student per year incurred by a college or university vary significantly. And one has to be very careful in comparing them. Vaizy showed that the cost of higher education in U.K. rose from £4.4 million in 1920 to £33.9 million in 1955 or about 7-fold. In almost the same period the corresponding rise in U.S. was 15-fold from $173 million to $2881 million. The amount spent on higher education in India has increased from Rs. 114 crores in the First Plan to Rs. 265 crores in the Sixth Plan. The total economic cost per student in USA varies between $2500 and $4000 for per laboratory based courses (Science & Engineering) and between $1600 to $2400 for classroom based courses. The Unit cost in India varies from Rs. 500 to Rs. 1200. The size cost relationship may be evaluated by fitting a second degree curve which yields a 'U' shaped cost curve indicating a tendency of the average cost to decline with the increase in enrolment till it reaches the optimum size. After that it starts increasing. The concept of unit cost, however, is not an exact science. For example, should all research expenditures be included in assessing the cost per student in a college or university? Cost of buildings, grounds, teachers' services, auxiliary services etc. are

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**Deputy Secretary, UGC, New Delhi.*

Views expressed in the article are of the author and not necessarily those of the U.G.C.

also being studied on a unit basis. In higher education no mention is generally made of capital costs. In the U.S. capital cost per student may well be between $300 to $400 and at Harvard it is atleast $800. Increase in courses from some 4000 to more than 14000 owing to explosion of knowledge and research journals (there are more than 20,000 journals in Bio-sciences) have also contributed to rise of unit costs. The rise of unit costs are universal.

Management & Research

Management of Research at the top level requires coordination. For example, in a State like Kerala, a lot of money is spent on the development of fisheries. However, government agencies do not take cognizance of the fact that the University has one of the best departments of Aquatic Biology and Fisheries.

On the other hand, though universities are packed with Research Scholars, none of them has a unified body to coordinate research and relate it to nation's problems. Research is the 'soul' of the the University. Research in Universities can best be studied when universities are viewed as an integral part of the total R&D infrastructure in the country. Today not more than 10 to 15% of the laboratory innovations are adopted by industry.

Our universities at the moment are doing mostly fundamental research which is also related to the priorities of International Science, where we can make only limited contributions lacking the infrastructure of the developed countries. On the other hand our own problems are neglected. Univesities because of their multi-disciplinary capabilities are ideally suited for comprehensive & inter-disciplinary research. Every effort is made by the University Grants Commission, to provide staff, and other infrastructural facilities etc. to enable Universities to contribute to international science and to interact with other R&D institutions. Realizing the importance of these schemes in the country to R&D effort, the UNDP agreed to supplement the UGC's effort by providing the international component. This shows the potential of the Indian University that we must develop and exploit.

The greatest constraint on the growth of research in universities is Finance. Most of the universities come under the control of State Governments with very little flexibility in the budgeting. Hence the universities are able to spend only 1 to 2% of their total budget to finance research. The major share is borne by the UGC through Research Projects and Fellowships etc.

As University bodies operate under heavy agenda, research gets a low priority in the discussions that take place. It has been suggested that Research outlays by Indian Firms should be 2% of Gross Profits in a year. The number of industrial firms that do research in India is very small. Research expenditure in Universities abroad is about 25% of the total budget of the University.

Man Power

The Draft Five Year Plan (1978-83), estimated that there were about 900 institutions (including universities) under the Central & State Governments and the private sector. The expenditure on Science & Technology rose from Rs. 27 crores in 1958-59 to about Rs. 400 crores, which was about 0.6% of the G.N.P. The stock of S & T manpower had been growing at the rate of about 9% per year over 20 years and was estimated to be about 3 million giving India the third largest complement of qualified S & T manpower in the world, next only to USA & USSR. In spite of this a system of R & D has not yet been created. The UGC, DST, AEC, ISRO, CSIR etc. are making efforts in this direction. To discharge their functions with any degree of efficiency, the universities will have to interact with other parts of the infrastructure. We have hardly made any significant contribution to International Science during the past 30 years. The greatness of a university is measured by the achievements of its graduates. California University, for example, has produced the largest number of Nobel Prize winners. The most important point here is to identify which are our most important needs and where we have the maximum advantage in competing for international science honours.

Vast changes are required in the attitudes and structures of universities and Industries, before efforts to establish 'Institutional Linkages' may be successful and the bridges between production, research & education may be established. Despite, however, apparent institutional inflexibility and power of the faculty and professionals to frustrate needed change, a strong intellectual commitment for reform persists.

As staff salary constitutes 60 to 80% of the education cost, the competence of faculty and administrators will affect both performance and results. Teachers' salaries should be professionally competitive, market sensitive and performance based.

Two-stage and three stage equilibrium models and Markov Chain Model have been used abroad for determining the actual number of faculty positions required in a university. The most important development science is 'Education'. Unfortunately, however, for various reasons, educational research in India is still in its infancy.

In the spectrum of Scientific and Technical Manpower, the Science Ph.Ds are much worse-off, because of their large supply and poor quality.

Only 77,000 scientists against the stock of 2.43 lakhs are employed in the R&D and teaching institutions.

One of the most serious problems in the majority of the countries, on the other hand, is the supply of scientists. By 2000 world population will be 6 billion with 380 million in USA. The U.S.A. desires to increase scientists and engineers from the present 11,00,000 or 1.4% to about 3% or 60,00,000 of the working group by 2000.

The USSR has a centrally planned economy. So education there is functional; and, liberal and professional education have been combined successfully so that each part of the training illuminates others.

The experience of France, Sweden and the Netherlands is to be contrasted with that of Germany, Denmark, Switzerland, the U.S. and even the U.K., where on the whole planning does not play a substantial part. French people, in particular, do rigorous planning and apply coefficients of elasticity expressing the fluctuations in demand.

Bombach, Kendrick and many others are critical of the use of regression analysis, because little is known about structural changes or projection trends because of the weakness of statistical series as a means of discovering manpower needs. These techniques have their own limitations according to them.

In 1982 the USA graduated 1/5th as many Engineers as the USSR. London awards more than a thousand doctorates, Combridge about 462, Delhi 175 and Kerala 52. Many countries now believe in democratization of higher education, that is, trade unions, youth associations, women's associations, teachers, students, industrialists, administrators, professionals etc. all sit together to discuss various problems of higher education including manpower needs.

In Yugoslavia, under the new Act schools are financed by all organisations interested in Education viz. communes, federations, republics, industrial, non-industrial etc. Schools have thus become independent institutions in the same sense as are the industrial self-financing enterprises and acquire through multiple channels a much bigger share of the national income. Even in an advanced country like the USA which is making stupendous efforts in education, and wherein the cost of education has increased from $27 billion in 1960 to about $200 billion in 1982, parents and even students are not satisfied. New programmes of college partnership with industry and private sector have been launched. To up-grade the technical skills, General Motors, for example, is training students from the prestigious Triton College & the Delta College Michigan.

Discussing the findings of the National Commission On Excellence in Education, President Reagan recently said in a Radio broadcast to the Nation, 'About 13% of our 17-years old are functional illiterates. More than 2/3rds of our high schoolers cannot write a decent essay'. Admission requirements should be raised. Other channels like British Open University in U.K. and Everyman's University in Israel, may meet the demand of higher education for masses. Increased tuition fee with full financial support in the form of fellowships & scholarships & students loans etc. to needy and deserving students & efficient management may help to solve the problem of resources for higher education to some extent. □

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PROSPECTUS & APPLICATION FORMS : are available from 10th January, 1985, on payment of Rs. 25/- at the college office on working day between 9.00 a.m. to 1.00 p.m. or by registered post on remittance through Bank Draft/Money Order for Rs. 30/- drawn in favour of the Director, Lalit Narayan Mishra College of Business Management, Muzaffarpur, Bhagwanpur Chatti, Muzaffarpur. No claim for refund of money paid for forms and registration will be entertained.

LAST DATE FOR SUBMISSION OF APPLICATION : Completed application on the prescribed form with a registration fee of Rs. 50/- addressed to the Administrative Officer-cum-Registrar, Lalit Narayan Mishra College of Business Management, Bhagwanpur Chatti, Muzaffarpur-842001, must reach the College on or **before 28th February, 1985.**

WRITTEN TEST : Applicants having completed the above formalities must report at 9.00 a.m. on 17th March, 1985, for written examination of three hours duration to be held in the Bihar University as well as in the College Campus.

DIRECTOR

Dr. Madhuri Shah Addresses Convocation of South Gujarat University

Excerpts from the Convocation Address delivered by Dr. (Mrs.) Madhuri R. Shah, Chairman, University Grants Commission, at the South Gujarat University, Surat, on December 27, 1984.

Convocation

"...Mr. Vice-Chancellor, this is hardly an occasion for me to go into complex problems of higher education or to draw the issues of light and shades for which there are many other forums. Nevertheless, I would like to share some of my thoughts with you on the profile of higher education today and our perspectives of development, especially in so far as these affect the careers of millions of our young people. While there are many achievements to our credit and our present infrastructure has enabled us to emerge as a country having the third largest scientific and technical manpower in the comity of nations, an atmosphere of gloom also seems to be engulfing us. There is a lack of trust between the students and teachers and it is felt that the potentialities of students are not fully utilised and developed by our universities and colleges. The prevailing situation is considered unsatisfactory from the point of view of the growing expectations of the society. There is also lurking suspicion that the educated persons do not realise their social responsibility and have become alienated from the society and the mainstream of national life. The system has over the years laid emphasis on individual accomplishments, routine type of information and regurgitation of knowledge, while it has neglected social objectives and the needs of development. There are many areas in which it has become dysfunctional.

The importance of higher education for national development cannot be overemphasised. Higher education provides the top and middle level professional, technical and skilled manpower required for industrial and agricultural development and the related services, including planning, administration and management of the system. Higher education not only provides the human resources to all research agencies and thus contributes to technological advancement and our aspirations to be self-reliant, but it also conducts basic and applied research within its own field. It is for these reasons that its impact is felt on the quality of life and quality of endeavour we make. It gives us international prestige and enhances our influence over other countries.

The most important aspect of planning the growth of education in the perspective of development is that we take steps to ensure that there is a proper fit between the education and manpower requirements, otherwise, there is the danger of educated persons becoming more and more frustrated. Even while recognizing that our tools of manpower forecasting are highly primitive and the data base totally inadequate, it is as plain as pike-staff that education has to be properly regulated. In this connection, it would be recalled that in the fifties and sixties, there took place in our country a spectacular linear growth at the tertiary level. The second world war had established the superiority of industrially advanced countries over those with a poor industrial base and infrastructure. The growth of education was also a direct outcome of economic theories which rightly treated education as capital. Since then, because of the mismatch between education and jobs and constraints regarding the availability of resources, there has been a general tapering of in the demand but the curve of higher education enrolments is still a rising curve. The growth rate of enrolment at the level of higher education was as high as 12.4% per annum during the decade 1951-52 to 1960-61 and 13.4% during the decade 1961-62 to 1970-71. This, however, dropped sharply to 3.4% during 1970-71 to 1977-78, then rose marginally to 3.6% between 1977-78 and 1981-82. The present rate is 7.2%.

The net outcome of this unplanned proliferation is that during the last three decades, the enrolment in higher education has reached a level of 3.35 million. The number of universities in the country has gone upto 139 and colleges 5246. The enrolment of weaker sections of society like scheduled castes and scheduled tribes has gone upto 9% and women's enrolment has reached 29.1%. This expansion has made the higher education a gigantic enterprise and the problems of resources and management highly intractable. This has also told upon the quality of the products.

University Grants Commission & Higher Education

The University Grants Commission was established in 1956 as a statutory organisation to achieve the objective of promotion and coordination of higher education and for the determination and maintenance of standards of teaching, examination and research in the country. During the last few decades, due to the concerted efforts of the Commission and the universities, the system has achieved a degree of maturity and excellence. The country has attained self-sufficiency and does not have to depend on any foreign expert in any branch of higher education. The universities have made significant contributions to research and have helped in the process of developing indigenous technology. Some of our institutions are internationally recognised for their valuable contribution.

The University Grants Commission has during the last few years undertaken number of measures for regulating the growth of education and for the maintenance and improvement of standards. It has generally commended a seven point national enrolment policy, which, *inter-alia*, includes determination of the intake capacity of courses and institutions in accordance with the present facilities, regulation of admission in order of merit and checking the establishment of new universities and colleges except in backward areas where the setting up of new institutions may be considered only after a survey of educational needs. Some of these measures are already bearing fruit, for example, in regulating the growth of enrolments in correspondence with the rate of growth of the economy, so that various problems such as decline in the relative wages of educated persons and the growing incidence of educated unemployment can be tackled more effectively.

Besides regulating the growth of enrolments, the Commission has also laid special emphasis on the faculty improvement programmes in recognition of the fact that the teacher has a vital role to play in the escalation of standards. As a result of the ongoing, comprehensive programme of teacher orientation and training and the minimum qualifications prescribed by the Commission by regulation, today approximately 7 percent college teachers have M.Phil and 15 per cent Ph.D degrees, mostly obtained under faculty improvement programmes. In the universities, 47 per cent lecturers, 76 per cent readers and 84 per cent professors are now holding the Ph.D. degree.

The Commission has also framed after several years of consultation with state governments and universities draft regulations defining the minimum standards of instruction for grant of any degree by a university, guidelines relating to teaching days and workload of teachers and a minimum programme of examination reforms. It is visualized that with additional inputs in these programmes as also the proposed elements in the seventh five year plan of the Commission, the teaching-learning situation would improve perceptibly in the years to come.

We are equally concerned about the standards of research and with a view to improving the prevailing situation, a National Educational Testing Unit has been set up. As you know, a test was held in 12 selected subjects for identifying talented students for the award of junior research fellowships. It is expected that the development of a national level test in different areas would help overcome the problem of camparability of marks/divisions/grades awarded by different universities, and of course select the best talent for research. In course of time, the test would become more objective and reliable and could even act as a pace-setter for the improvement of syllabi and methods of teaching/evaluation in the university system, in general. Subsequently, it is proposed to develop tests for admission at the postgraduate level in the central universities or other participating universities. There may also be a test for the selection of undergraduates in various subjects in which induction of talent is felt necessary. The National Education Testing Unit may also develop tests for the selection of university and college lecturers.

The Commission has also paid attention to the improvement of undergraduate education or the collegiate sector of higher education. This is sought to be achieved through developmental assistance to colleges and the quality improvement programmes initiated by colleges, such as COSIP/COHSSIP, support for autonomous colleges and restructuring of courses. The scheme of restructuring of courses has two important aspects viz. to make the first degree course more relevant to the rural environment and to the developmental needs of the community and to link education with work/field practical experience and productivity. It needs to be clarified that restructured courses comprising foundation courses, core courses and courses of an applied nature, are not job-oriented courses but it is felt that the linking of education with practical experience through the various components of restructured courses would increase the job prospects of students.

The Commission has also undertaken some special measures reflecting its concern for the improvement of standards. These include improvement in courses of study, syllabi, methods of teaching and evaluation, provision of national talent scholarship for undergraduate studies on the NCERT pattern, summer schools for gifted students, special seminars and workshops for teachers and support for journals. There is also a proposal for setting up information centres in the humanities and social sciences to provide documentation and abstracts of articles for the use of research scholars/teachers in various universities.

The University Grants Commission having the focal responsibility, backed up with certain statutory powers, has been consistently making an effort to evolve a set of acceptable ideas to improve the content and quality of education, to structure for better serving the individual and societal needs of our times and to link education with national development.

Mr. Vice-Chancellor, it is possible that the impact of the various measures initiated by us in regard to enrolment policy, contents of courses, teacher competence, methods of teaching, evaluation and strengthening of the motivation of students and teachers is not felt partly because of the size and complexity of the system of higher education in India and partly because of the magnitude of the problem. What is called for is a multipronged approach on the one hand and the active collaboration of the universities, the State Governments and the Commission on the other. Such a collaborative effort is crucial for the implementation of developmental programmes and maintenance of standards. It has also become feasible now that education has been brought on to the Concurrent List. It is, however, important that in dealing with higher education one recognises the basic principle that the responsibility of managing higher education is to be shared between the Union Government and the various State Governments and the initiative must remain with the universities. From this point of view, the system of higher education in the country should continue to be diversified in all essential respects in regard to organization and structure, degree of autonomy, admission of students, development of curricula, methods of teaching and evaluation, machinery for the affiliation of colleges, planning and coordination. Although we have a federal set up in the country and individual universities/regions must be encouraged to try out innovative programmes, it is also important that nothing is done which would affect student and teacher mobility or the basic unity of the country.

A policy frame of development of higher education in India was adopted in 1977 and served as a basic of the Sixth Plan assistance to the universities. In the Seventh Plan, the Commission's endeavour would be to assist the universities for (i) consolidation and strengthening of the existing facilities; (ii) modernizing and upgrading of courses and of laboratory work and to extend methods of teaching from pure lecturing to the use of other devices such as tutorials, seminars, term papers etc. including the use of modern technology; (iii) strengthening institutions and departments so that a good part of our educational infrastructure can function at highly competitive academic level; (iv) raising the level of over all performance of those institutions which largely serve the scheduled castes and scheduled tribes and people in backward areas; (v) developing and institutionalising professional development programmes for teachers in various disciplines; (vi) extending support to research in a substantial way and for ensuring that high quality work is done in every field, basic as well as applied research; (vii) developing educational, research and extension programmes in order to link them with developmental activities, organisational links and sharing of facilities and manpower; (viii) modernising, strengthening and restructuring management of institutions particularly for protecting them from non-academic pressures, and (ix) strengthening, monitoring and evaluation of programmes.

Relevance of Education

Our educational system has not undergone any radical change since independence to suit the cultural tradition, social objectives and economic needs of the people. Above all, the unemployment position is assuming alarming proportions. A sample survey recently conducted has shown that the unemployment figure for urban areas alone was as high as 2.5 crores. The university system in our country is producing more than 6 lakh graduates and 1.2 lakh postgraduates and more than 4000 doctorates every year. As only 20% of our undergraduates join the postgraduate courses every year, this means that nearly 5 lakhs undergraduates are added every year to the list of unemployed if they are not able to secure jobs after the first degree. The bulk of graduates do not fully utilise the knowledge acquired by them in the jobs where they are employed. Many of our first degree courses organised on traditional lines are irrelevant to the present day needs of our country. Growing unemployment leads to more frustration among the educated youth and contributes to student unrest.

Nearly 80% of our people live in Villages. The vast mass of illiterate, ignorant peasants live in huts and sub-standard dwelling, many without essential amenities such as the electricity, protected drinking water etc. The environment of the villages is depressing. The most important and urgent reform needed in our education today is to transform it, to reorient it so that it becomes related to the life needs and aspirations of the rural community and serves as an instrument of socio-economic development within the existing educational framework. If the universities cannot find a solution to the problems of hunger, disease, malnutrition and other human needs, then their very rationale is in question. The challenge before them is how in addition to fulfilling their traditional role they can respond to the needs of the community. For this the universities have to identify themselves with their immediate setting and environment. They will have to assume the responsibility of social transformation and economic modernisation. The University Grants Commission has been requesting the universities for the last several years to restructure the existing conventional courses at the first degree level so as to make them relevant to the needs of the region concerned.

Continuing Education an Extension :

Although, the primary role of a university is to acquire, preserve and disseminate knowledge at the same time, it must be able to inculcate new values, attitudes, imbuing students and teachers with a sense of social responsibility and enable them to use the knowledge and skills acquired by them for the benefit of the society. This aspect makes it imperative that the universities should take up programmes of continuing education and extension as an activity as important as teaching and research. In this regard, the academic guidance and financial support provided by the University Grants Commission towards programmes of continuing education, adult education and extension work should be utilised fully by the universities to realise their goals and social responsibility.

Extension should not be looked upon merely as a welfare activity for the social groups, but as a process of interaction with the society leading to valuable learning experience and as a means of making higher education relevant to the needs of the society and oriented towards the solution of existing problems. Special care is to be taken to organise programmes for scheduled castes/tribes, women and for other weaker sections of the society, as also to link the adult education programmes with the development programmes of the region.

The universities have a special role to play in the process of rural development. This fact was recognised even before the country achieved independence. Leaders like Gokhale, Lajpat Rai, Tilak, Malaviya, Tagore and Mahatma Gandhi, to name a few, went to the extent of organising educational institutions for the purpose. Gandhiji emphasised the need for training the youth in the educational institutions to prepare them to work for rural reconstruction. The situation, however, after independence, seems to be quite different and except a few institutions the universities, in general, have ignored this aspect.

UGC and Non-Formal Education :

Despite the fact that there has been a phenomenal expansion in higher education, India is still behind other countries in terms of percentage of the age group of 18-24 in the population which is enrolled in the colleges and universities. In many areas, enrolment is far below the national average. Large sections of the population especially the socially disadvantaged sections are far behind others in higher education. Country's resources do not permit the opening of new universities and colleges for providing education to these people. The University Grants Commission has taken an initiative in this direction. With the help of Insat-1B, the U.G.C. has been able to make a small beginning. One hour has been assigned to higher education in satellite programmes and the Commission has decided to set up training and production facilities with standard equipment in six institutions to start with. More institutions would be added in the years to come. A Central Programme Committee has been set up to coordinate and channelize suitable materials for daily telecast to doordarshan. It has been decided to make what are called enrichment programmes at the undergraduate level. Some topics will relate to national development and national concerns such as agricultural or industrial visions, achievements shortcomings, future perspectives or national integration, secularism and socialism as provided in our Constitution.

Population Education

If the process of socio-economic development is to gain momentum and if social inequalities are to be eradicated, change in the attitude and behaviour and also in the value system seems to be indispensable. This can be possible only through population education. The planning process in India from its very start in 1951 recognised the importance of inter-relationship between population and socio-economic development, long before the country became a signatory to the World Population Plan of Action in 1974. Since then, much greater attention has been paid to the integration of population policies into the development process which has been increasingly concerned with the amelioration of the lot of weaker sections of the community.

With the acceptance of the role of extension work as a third dimension of the university's programmes by the University Grants Commission, it is most appropriate for the universities and colleges to develop systematic linkages and ultimate integration of population issues in the curricula of every department of studies at the university level as well as in its extension and community services.

Apart from the need for updating courses to keep pace with rapid changes and improving the quality of education, higher education must also be relevant, which is not possible without relating courses and programmes to the needs and aspirations of the society and without the academic community interacting with the community outside the university. Whether it is in regard to the introduction of new courses or the structure of courses or R & D efforts or priority areas of research, the focus has to be on the goal of relevance. Education can no longer function in the vacuum of intellectual abstractions but must serve the society which supports it and thus become an instrument of national development. It has to promote individual excellence but must simultaneously emphasise the social objectives. If I may say so, education has to be both-an "ivory tower" and a "service station."

Education also has a role in national integration and international understanding. There are a number of countries whose societies are pluralistic or which have problems of ethnic minorities or which have a multiplicity of spoken and written languages. In such contexts as in our own country, it becomes important for universities to develop a national outlook and to promote integration through their teaching and research programmes without giving up objectivity and the pursuit of truth. The name of the university also implies its cosmopolitan character. In all ages but more particularly in contemporary times, a university has to develop international understanding and build the necessary bridges specially in view of the growth of mass communication media. It should also be recognised that knowledge is an international commodity and one has, therefore, to keep the doors and windows open in order to allow fresh breeze to blow in..." □

INFORMATION SERVICE
13 FEB 1985
C.F.T.R.I., MYSORE

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NEW MEHRAULI ROAD, NEW DELHI-110067

No. Aca. III/2/85

OPENING FOR A LIBRARIAN

The Jawaharlal Nehru University is looking for a Promising dynamic Librarian to head the fast expanding Central Library and its allied systems, catering to over 2,000 scholars actively engaged in doctoral/post-doctoral research in a number of interdisciplinary areas with a faculty size of about 350 covering a whole lot of disciplines like Area Studies, Social Sciences, Humanities, Languages, Environmental Sciences, Computer & Systems Sciences, Physical Sciences, Arts & Aesthetics etc.

As on date, the total collection of books and periodicals stands around 3 lakh volumes. In addition, the Library subscribes to over 2,500 national and international journals covering a large number of disciplines. Besides, library receives a sizeable collection of books, volumes and journals as gifts from foreign countries and also outside agencies. The library also caters to the documentation needs of the School and Centres of Study, maintains a sizeable section of press clippings and citation studies.

The essential qualifications for the incumbent being:—

(a) First or Second Class M. Lib Science or M.A./M.Sc./M.Com. plus a first or second class B. Lib Science or Diploma in Library Science.

(b) At least 10 years' experience as Librarian or in a responsible professional capacity in a University Library.

(c) Ph.D. degree or equivalent research work in the field relevant to the profession.

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Scale of Pay : Rs. 1500-60-1800-100-2000-125/2-2500.

The incumbent will be entitled to C.P.F. or G.P. Fund-cum-Pension-cum-Gratuity/C.G.H.S. schemes as per University Rules.

Persons already in employment should route their applications through proper channel.

Any of the qualifications may be relaxed on the recommendation of the Selection Committee by the University in case of candidate otherwise found 'more' suitable and professionally competent.

Second Class (mail) rail fare (both ways) by the shortest route will be paid to candidate invited to appear for interview from outstations.

Applications on the prescribed form, obtainable free of cost from the Section Officer (Acad. & Estt. II) Branch of the University by sending him a self-addressed stamped envelope (affixing postage stamps worth Rs. 3.45) of 23 cm × 10 cm size should reach the Assistant Registrar (Acad. & Estt.), Jawaharlal Nehru University, New Mehrauli Road, New Delhi-110067, latest by **7th March, 1985.**

1985 UNIVERSIADE

Association of Indian Universities, in collaboration with the Sports Authority of India, is organising an International Football Match between the Indian Universities Football Team and the Chinese Universities Football Team in Delhi on 12th February, 1985. This match is a preliminary round of the Football event of the next World University Games (Universiade) being held in Kobe (Japan) from 24th August to 4th September, 1985. Prior to this, the schedule of World University Games included mandatory disciplines in Athletics (M&W), Basketball (M&W), Fencing, Gymnastic, Judo, Swimming (M&W), Diving & Water Polo, Tennis (M&W) & Volleyball (M&W). Football has been included in the schedule as a mandatory discipline, for the first time, with effect from this year.

The tournament has been split up into two ladders: (i) Preliminary Round; (ii) Main Competition.

International University Sports Federation (FISU), under whose auspices this competition is being organised, has divided the entering teams into 4 zones and the entries received in each zone are listed below:

Africa: (1) Algeria, (2) Madagascar, (3) Nigeria;

America: (1) Argentina, (2) Brazil, (3) Canada, (4) USA, (5) Paraguay, (6) Uruguay;

Asia: (1) China, (2) Hongkong, (3) India, (4) Indonesia, (5) Iran, (6) Jordan, (7) Kuwait. (8) Korea, (9) DPR Korea, (10) Chinese Taipai;

Europe: (1) France, (2) Belgium, (3) Spain, (4) Norway, (5) Germany F.R., (6) Great Britain, (7) U.S.S.R. (8) Netherlands.

Two teams from the African Zone, 3 teams from the American Zone, 4 teams from the Asian Zone and 5 teams from the European Zone will qualify for the main competition to be conducted at Kobe from Aug. 24 to Sept. 4, 1985. Each zone is further divided into sub-groups. The Sub-groups of the Asian Zone are as follows:

Group 1: Hongkong, Korea, Chinese Taipai.

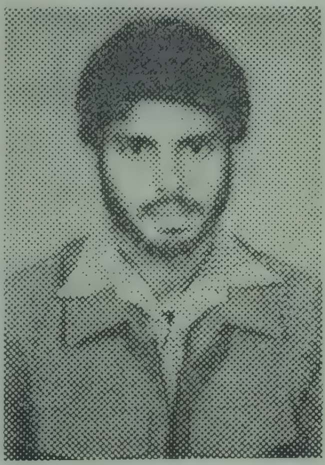
Group 2: P.R. China, India.

Gourp3: D.P.R. Korea, Indonesia.

Group 4: Kuwait, Iran, Jordan.

Only one team will qualify from each group for nthe main competition. The winner of the Prelimiary Round between India-China Universities Teams will qualify for the main competition.

The members of the Indian Universities Football Team are:



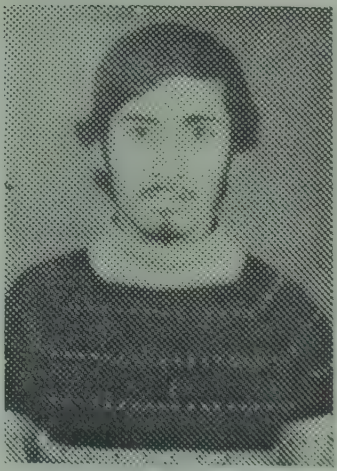
Paramjit Singh (Capt.)
(Panjab Univ.)

A. Nizar (Vice-Capt.)
(Kerala Univ.)

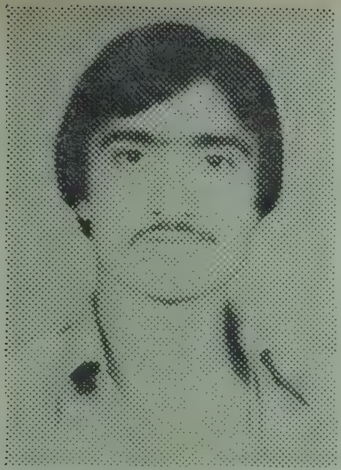
S. Joshi
(Vikram Univ.)

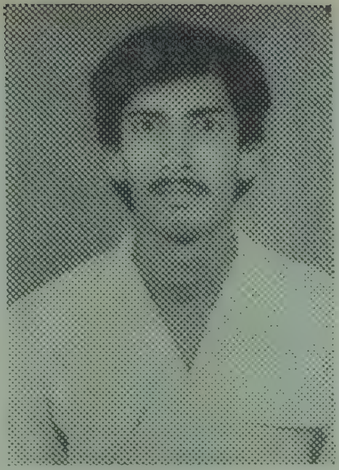
Aboobacker Koya C.C.
(Calicut Univ.)

Prabir Kumar Das
(Burdwan Univ.)

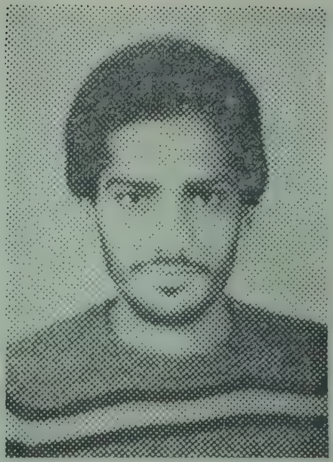


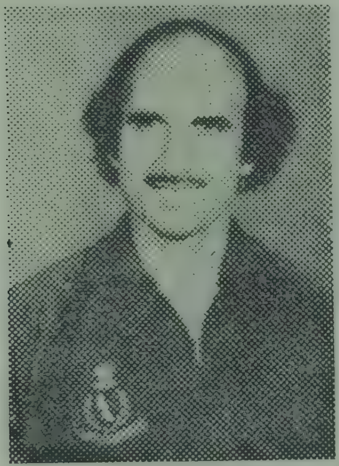
Debasis Koner
(Burdwan Univ.)


Sammati Prakash Saini
(Jabalpur Univ.)


Norbert D'Costa
(Bombay Univ.)

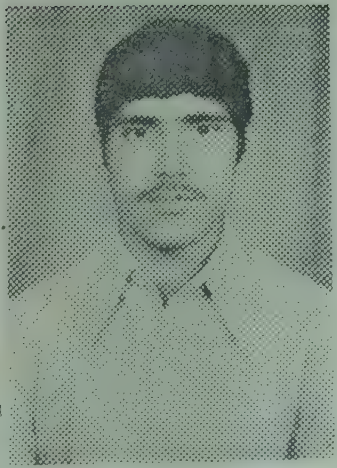
Santosh Kumar Kashyap
(Delhi Univ.)


Jagmohan Singh
(Panjab Univ.)

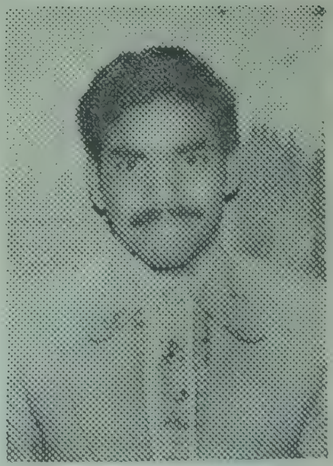

P. L. Rana
(Coach)
(Chief Coach, NIS,
Patiala.)

R.N. Bhattacharyya
(Coach)
(Burdwan University
Coach)

C.V. Pappachan
(Calicut Univ.)


S. Majumdar
(Burdwan Univ.)

Mushtaq Ali
(Rohilkhand Univ.)


S. Ghee Varghese
(Kerala Univ.)

Gujarat Vidyapith Celebrates the International Youth Year

Gujarat Vidyapith and the Institute of Development of Youth jointly celebrated Swami Vivekanandji's birthday on 12-1-1985 as an International Youth Day. Over 150 youths from various rural youth centres joined the celebrations. Well known poet and former Chancellor of Visva Bharati, Shri Umashanker Joshi inaugurated the function by lighting a lamp. Prof. Ramlal Parikh, the Vice-Chancellor of Vidyapith, presided.

Prof. Parikh, in his speech, recalled his own long association with the youth activities for over four decades since 1945. He stated that the youth activity did not belong to a particular section of the society. It is invariably wedded to the development of the entire nation and through it to the human kind. The energies of our youths if properly canalised for constructive development programmes, will undoubtedly prove to be a great asset for reconstruction of our nation. He further stated that Gandhiji's views on the role of youth in social reconstruction were pertinent today.

If we want to save the world from violence and anhilation, Gandhian constructive programmes were inescapable. The Indian Youth should forge itself in an organised manner towards New Society—Non-violent Society—on a local as well as global scale. Prof. Parikh welcomed the Prime Minister Shri Rajiv Gandhiji's announcement to delink degrees from jobs as a measure towards self-reliance and self-employment. This would pave the way for a better 21st Century.

Shri Umashanker Joshi in his inaugural address said the youth should pursue the ideals of Swami Vivekanand. Swamiji did a century of work in his short life-span of forty years only. Shri Joshi also commended Mahatma Gandhi's ideology of non-violence, love and mutual co-operation. Only the young men and women could reconstruct our Society.

The convention adopted a declaration which welcomed the U.N. theme of Participation, Development and Peace, and called upon the students and youth to oppose big-power struggle in Indian Ocean and prepare for 1986 Peace Year for securing disarmament and abolition of nuclear weapons. The Conference also stated that India's progress depends on uplift of Rural poor and urged the youth to dedicate themselves to the service of Rural Society. It also appealed the Governments to promote self-employment through wide-spread vocationalisation of education.

Third Punjabi Development Conference organised by Punjabi University

The Third Punjabi Development Conference was organised by the Directorate of Punjabi Planning and Development of Punjabi University from 7 to 9 December 1984.

The two main speakers—Mr. S.S. Dhanoa, Chief Secretary of Punjab, and Dr. S.S. Johl, Vice-Chancellor of the University—held the media responsible for generating hostility against Punjabis in general and Sikhs in particular living in different parts of the country outside Punjab.

Mr. Dhanoa, who inaugurated the conference, said that while he was serving in Bihar he saw no ill feeling for Punjabis, including Sikhs. But now the situation was different.

He commended the restraint shown by Punjabis "who are known for their valour".

Dr. Johl, who presided over the inaugural session, said that vested interests had failed to create communal differences in Punjab. However, people in other parts of the country recently failed to show restraint.

He suggested that the Punjabi language should be made a

AIU Constitutes Task Force on Distance Education

A Task Force on Distance Education has been constituted by the Association of Indian Universities to consider various aspects of Distance Education in the country under the Chairmanship of Prof. G. Ram Reddy, Vice-Chancellor, Andhra Pradesh Open University. The terms of reference of the Committee are :

(i) to study systematically the existing correspondence courses offered by universities;
(ii) to outline the basic concepts and principles of distance education that can be undertaken ;
(iii) to suggest appropriate communication technology in the context of what is likely to be available on the Indian scene in the next ten years; and finally
(iv) to work out modalities of implementation of distance education as a mode of education supplementary to the conventional system.

The other members of the Task Force are :

(1) Dr. R. Subbayyan, Vice-Chancellor, Bharathidasan University.
(2) Dr. K.G. Deshmukh, Vice-Chancellor, Amravati University.
(3) Dr. Ramesh Mohan, Director, Central Institute of English & Foreign Languages, Hyderabad.
(4) Dr. Jagdish Narain, Secretary, AIU, New Delhi.
(5) Prof. V. Natarajan, Project Director (Exam). AIU, New Delhi — Member Secretary.

The first meeting of the Task Force will be held at AIU House, New Delhi at 2.30 p.m. on March 13, 1985.

compulsory subject in all colleges of the State.

Referring to the topics listed for discussion at the Conference, Dr. Johl said there was need for objectivity in recording history.

He pleaded for "originality" in Punjabi Journalism, which was at present "translation journalism".

Mr. Shamsher Singh Ashok, a renowned Punjabi religious historian, gifted his collection of 2609 books to the University library.

Mr. Jagjit Singh Anand, Editor of Nawan Zamana, said that most of the Punjabi dailies had been conniving at extremism which was sheer perversion of the principle of universal brother-hood preached by the founder of Sikhism.

Mr. Anand said "timidity" on the part of Punjabi dailies had ultimately created a critical situation for a brave community. Newspapers, without doubt, moulded public opinion and so it was the duty of the Punjabi newspapers to courageously oppose all acts of extremism and mindless violence.

Punjabi newspapers, Mr. Anand stressed, should boldly expose all wrong actions and try to reinforce the faith of the Punjabis in the principle of universal brotherhood.

Besides Punjabi journalism, sessions were held on Punjabi Historiography and Punjabi criticism during the 3-day Conference.

Padmavathi Varsity to adopt harijan colonies

Under the extension programme of the University, the Padmavathi Mahila University, Tirupati is adopting two Harijan Colonies near Tiruchanur—Tanapalle and Nallamanukaluva villages. This is the first university in Andhra Pradesh, it is claimed, to launch a rural adoption programme.

ASSOCIATION OF
INDIAN UNIVERSITIES

Varsities Football Fiesta
India Meets China On The Field

Jawaharlal Nehru Stadium, February 12, 1985, at 3.00 pm.
Make sure you are there to watch this action-packed encounter between the varsity teams of India and China.
Come! See! The young prodigies in action.
Tickets will be sold from February 2, 1985, onwards at:
Jawaharlal Nehru Stadium
(West Gate) — between 10 am & 5 pm
Indian Overseas Bank — between 10 am & 2pm
(on working days only)
at the following branches:
Janpath, Gole Market, Sadar Bazar (Delhi Cantt.), Gurdwara Road, Daryaganj, Model Town, Roop Nagar and Nehru Place.

Tickets: Rs. 5/- & 3/- (Lower Tier)
Rs. 2/- (Upper Tier)
(Concessional tickets ot Re. 1/- (Upper Tier) for students and service men, against their Identity Cards)

For details, contact:
Sports Authority of India
Ph. 698630

Junior Research Fellowships :

UGC measures to help qualified candidates

The University Grants Commission has asked the Universities to invite applications on all-India basis, by advertising in the daily newspapers, for the existing vacancies of junior research followships from the candidates who had qualified in the national level test held in August, 1984 by the Commission. Such subsequent vacancies will also have to be advertised as and when arise.

According to a press release issued by the University Grants Commission the Universities have also been allowed to reallocate junior research fellowships subject-wise or faculty-wise depending upon the number of candidates available from the list of the candidates who have qualified in the all-India test, but such a reallocation may be done only after the existing vacancies have been advertised on an all-India level and no suitable candidates are found.

The Commission has also decided that in case a candidate had been registered/enrolled for M Phil/Ph.D. before 31st July, 1984, he may be awarded the fellowship in the concerned department at the enhanced rate provided he has qualified in the national level test even though no vacancy of junior research fellowship may be available with the university. Such a fellowship would be treated as personal to the candidate and would not be adjusted against the fellowships allocated to the University. In the case of students enrolled for M.Phil, the fellowship will be awarded for one year only and will be available only in Universities, where M.Phil is pre-requisite for Ph.D.

In the case of major research projects, departmental research support programmes, and Centres of Advanced Study etc., Universities have been asked to advertise the existing vacancies and invite applications from those candidates who have qualified in the national level test. If no candidate is available the University may appoint a junior research fellow from outside the panel of qualified candidates subject to the conditions that (a) no candidate will be appointed if he appeared in the test and did not qualify (b) selected candidates will be paid Rs. 800 p.m. and not the enhanced value of Rs. 1000 p.m. and (c) the selected candidate will appear in the next test and his fellowship will be discontinued if he fails to qualify in the test.

The University Grants Commission held a national level test for junior research fellowships in August, 1984 in 12 subjects viz: (1) Physics (2) Chemistry (3) Mathematics (4) Life Sciences (5) Geology (6) Geography (7) Economics (8) Political Science (9) Philosophy (10) Psychology (11) Sociology and (12) History and 1205 candidates had qualified. It is now proposed to organise tests in the remaining subjects in April, 1985.

University Grants Commission
Bahadur Shah Zafar Marg
New Delhi-110002

Applications are invited by the University Grants Commission for the ward of 60 Research Fellowships in Engineering and Technology for 1984-85.

Value

The value of Research Fellowships is Rs. 1,200/- per month. The fellowship carries an annual contingent grant of Rs. 5,000/- for meeting authorised contingent expenditure connected with the research work. The fellowship and contingent grants are exempted from Income Tax.

Eligibility

Fellowships are open to persons preferably below the age of 40 years who have got a Master's degree in Engineering & Technology from a recognised University in the first or second class and have shown aptitude for research work. Women candidates are eligible upto 50 years.

Duration

The research fellowship will be tenable for a period of four years. It may be extended upto a period of six months in special cases on the recommendations of the Supervisor and the Institution.

Reservation

10% of the fellowships are reserved for candidates belonging to scheduled castes and scheduled tribes who fulfil the requisite qualifications laid down for the award. If qualified candidates from the scheduled castes and scheduled tribes are not available, the reserved fellowships may be trnated as unreserved.

Selection

Selection will be made on merit and on the recommendations of a Committee appointed by the Commission. The decision of the Commission shall be final.

Application for Award

Applications in the prescribed form which may be had from the University Grants Commission's office on request with a self-addressed stamped envelope of 22 cms. x 10 cms. Applications duly filled in should reach the Secretary, University Grants Commission, Bahadur Shah Zafar Marg, New Delhi-110002, latest by **15 February, 1985,** through the University/Institution approved under the U.G.C. Act where the candidate proposes to undertake research work.

davp 823 (13)84

Correspondence Course in Evaluation Methodology & Examinations
(Basic Level, Intermediate Level & Advanced Level)

Applications are invited from college/university teachers for admission to three Correspondence courses in Evaluation Methodology and Examinations at Basic Level, Intermediate Level and Advanced Level, each of six months duration (1st April, 1985 to 31st October, 1985). Basic Level course is offered from Regional centres at Delhi, Bombay and Madras. A personal "Contact Programme" for three days is planned and prescribed books will be supplied to every candidate.

Requests for prospectus and application forms accompanied by a crossed Indian Postal Order for Rs. 5/- drawn in favour of Secretary, Association of Indian Universities and a self-addressed stamped (Re. 1/-) envelope should reach the undersigned. The last date is **15th March, 1985** for non-sponsored candidates and 30th March, 1985 for sponsored candidates. For sponsored candidates, universities/institutions can pay the course fee and travel expenses for contact programme from UGC unassigned grants.

Prof. V. Natarajan
Project Director (Exams.)
Association of Indian Universities,
AIU House, 16 Kotla Marg,
New Delhi-110002.

News from Agril. Varsities

KAU looks towards 2000 AD

A Seminar, 'KAU-2000 AD' held by the Kerala Agricultural University from November 22-24 in the main Campus at Vellanikkara could give a long-term perspective to agricultural education, research, extension and administration and finance, social organisation and uplift of the under-privileged sections. Over 300 delegates participated in the seminar.

The seminar was inaugurated by His Grace Mar Gregorios, Arch Bishop of Trivandrum on November 22. In his keynote address His Grace under-scored the need of orienting agricultural research help draw the greatest benefit from the resources, nature has placed at our disposal with a bounty beyond words. "The greatest of these resources", His Grace pointed out, "is our abundant sunlight". He also emphasised the need for KAU to intensify research on low cost farm practices in place of capital intensive technology practised by the West.

Shri T. Madhava Menon, Vice-Chancellor, Kerala Agricultural University welcoming the gathering spelt out the objectives of the Seminar. Dr. N. Sadanandan, Dean, College of Agriculture, proposed a vote of thanks.

Lead papers on Agricultural Education, Agricultural Research, Extension Education, Veterinary and Fisheries Education, Administration and Finance and on the Role of the University in the welfare of the under-privileged sections of the people were presented by eminent scientists and administrators from both within and outside Kerala State. In all, more than 70 papers were presented during the Seminar.

World Bank Vice-President visits HAU

The Vice-President of the World Bank, Mr. Franc Vogl, visited the Haryana Agricultural University, Hissar, recently.

Mr. Vogl spent considerable time in the museum of the College of Agriculture, visited Seed Technology Laboratory as well as Horticulture Vegetable Laboratories in the research area. Mr. Vogl visited the Giri Centre and the College of Animal Sciences.

In his discussion with the Vice-Chancellor Mr. Vogl went over the whole gamut of the University activities.

Flower gardening course at KAU

The Kerala Agricultural University has started a correspondence course in 'Flower Gardening' as part of its distance education programme. So far, 530 candidates from all over Kerala and neighbouring States of Tamil Nadu and Karnataka have registered for this course.

News from Abroad

UN Varsity's first research and training centre

The United Nations University has established its first research and training Centre—World Institute for Development Economics Research (WIDER)—in Helsinki, Finland. The Institute in its inter-disciplinary work will analyse the existing and emerging problems of the world economy in order to assist in promoting new responses to them. The Centre will operate through a World-wide network of scholars and institutions. It will conduct policy research and analyse and provide advanced training particularly to young scholars and potential economic policy makers from the Developing Countries.

Dr. Lal Jayawardena, currently Director-General, Economic Affairs in the Ministry of Foreign Affairs of Sri Lanka has been appointed the first Director of WIDER.

Vedic University in Washington DC

North America's first Vedic University has been organised in Washington D.C. by Maharshi Mahesh Yogi who has already established an International University at Fairfield, Iowa. The Vedic University will concentrate on research on the Vedas. It has already introduced a regular curriculum and transcendental meditation and related activities.

British library to use satellite facility

The lending division of the British Library is to take part in an international project using a satellite link for high speed transmission of material. The scheme is expected to become operational in 1986. This will enable full text documents and graphics to be sent electronically from the lending division at Boston Spa, North England to users elsewhere. The British Library's involvement is in co-operation with the Department of Trade and Industries and British Telecom International, it is reported.

UNIVERSITY OF BIHAR

MUZAFFARPUR

Advertisement No. 1/1985

Applications are invited for award of Junior Research Fellowship of the value of Rs. 1000/- per month plus contingency grant of Rs. 3000/5000 per annum in Physics, Chemistry, Botany, Zoology, Mathematics and Political Science. Only those candidates who have qualified at the National Educational Testing held by the UGC in these subjects and hold first or high second class Master's degree in the subjects should apply. Applications on plain paper with full particulars about his date of birth, nationality, present and permanent address, academic qualification, research experience, Roll No. and the examination centre for NET be submitted to the undersigned latest by the **15th February, 1985**.

M. Jha
Development Officer

VIKRAM UNIVERSITY, UJJAIN

No. Dev/UGC/JRF/6616 **Dated : 30-1-85**

ADVERTISEMENT

Applications are invited on plain paper, containing the following details, from those candidates who have been declared qualified in the National Educational Testing held by the University Grants Commission in 1984 for the award of Junior Research Fellowships carrying the Fellowship value of Rs. 1000/- per month with contingency grant of Rs. 3000 Rs. 5000 per annum in the subjects of Physics, Chemistry, Geology, Mathematics, Botany, Zoology, Economics, Political Science, History, Geography, Philosophy and Sociology.

The fellowship is normally tenable for a period of 3 years in the first instance which may be extended for a further period of one more year under special circumstances.

DETAILS OF APPLICATION

(1) Name.................................. (2) Address....................................

(3) Date of Birth................................ (4) NET Roll Number as mentioned in the Call letter

(5) Subject of fellowship

(6) Research experience (7) other relevant information.

The candidate to whom fellowship is awarded shall have to be enrolled as a student for Research in the University. The last date for the receipt of Applications will be **8th March, 1985**.

L. N. Parmar
REGISTRAR

AIU Library

Established in 1965, the AIU Library has acquired over the years a valuable collection of books and documents on Higher Education. Among the topics prominently represented are Educational Sociology, Educational Planning, Educational Administration, Teaching & Teachers' Training, Examinations, Economics of Education and Country Studies. Developing fields of Adult Education, Continuing Education and Distance Education, and Educational Technology are also well stocked. The Library is particularly strong in its collection of reports whether they are on the setting up of different universities or on the state of Higher Education. Files of Annual Reports of different universities are also maintained. Readers are kept informed of the latest acquisitions through our column 'Additions to AIU Library'.

The Library also receives about a 100 periodical titles on Higher Education. All these are indexed regularly and a select list appears every month as 'Current Documentation in Education'.

Doctoral Degrees awarded during the preceding month are reported as 'Theses of the Month' while registrations made for such degrees are flashed as 'Research in Progress'. Bibliographies are also compiled and supplied on demand.

Research scholars and students of education are welcome to use these resources. The Library is situated at 17-B, Indraprastha Marg, New Delhi-110 002. It is open from 10 a.m. to 5 p.m. Monday through Saturday except Second Saturday. Access can also be had through inter library loan for which requisition must be made through your Librarian.

THESES OF THE MONTH

A list of Doctoral Theses Accepted by Indian Universities

HUMANITIES

Philosophy

1. Baral, Rajkishore. *Critical studies in the philosophy of descartes.* U Poona.

2. Bosamia, I.J. *Nature of self in Sri Aurobindo's philosophy.* Saur U, Rajkot.

3. Pandey, Uma. *A critical and comparative study of the contributions of post Shankra advaitins.* D. Litt. HS Gour, Sagar.

Fine Arts

1. Sood, Kavita. *Madhyakaleen kalayon mein antravlamban; kavya ke sandarbh mein samvat* 1375 *se* 1900 *tak.* HPU, Shimla.

Architecture

1. Randhawa, Amrit. *The temples of Mandi: A study of the temple architecture and sculpture of Mandi Town.* Pb U, Chandigarh.

Drawing & Painting

1. Goyal, Ila. *Kangra laghu chitron mein nari ankan: Shailigat sarvekshan.* Meerut U.

Music

1. Bawra, Joginder Singh. 15*vin shatabadi se adhunik kal tak Panjab mein shastriya sangeet ka pradurbhav avam vikas.* U Delhi.

2. Chaubey, A.C. *An assessment of the growth and development of institutionalised teaching system of music in North India.* IKSV, Khairagarh.

Language & Literature

English

1. Chaudhary, Shreesh Chandra. *Some aspects of the phonology of Indian english.* CIEFL, Hyderabad.

2. John, E.T. *The British absurd drama: A search for identity and meaning.* Kar U, Dharwad.

3. Kohli, Indira. *Paul Scott: A study of his art and ideas.* Meerut U.

4. Madhusudhana Rao, Mallavarapu. *Time in Thronton Wilders fiction : A study.* Andhra U, Waltair.

5. Ramachandran, Meera. *The prevailers in the fictional world of William Faulker.* U Delhi.

6. Sharma, Balak Ram. *The poetry of Dylan Thomas: A study in symbolism and philosophy.* Meerut U.

7. Siddiq Ali. *The Black Humor Novel : A study of the selected novels of Joseph Heller, John Barth and Kurty Vennegut, Jr.* OU, Hyderabad.

8. Trivedi, Achla. *Family relationships in the plays of Shakespeare.* Vikram U, Ujjain.

Russian

1. Ivanovna, I.E. *Towards a linguistics analysis of literary text in terms of autosemantics.* CIIFL, Hyderabad.

Sanskrit

1. Arya, Madhu. *Shanker-Divgijaya' ka darshnik tatha sahityik drishti se adhyayan.* Meerut U.

2. Gupta, Sukeshi Rani. *Shatpath Brahmin mein uplabdh tadatmyon ka vivechan.* Meerut U.

3. Hindocha, H.N. *A critical study of Sangitraghunandanm of Vishwanathsingh.* Saur U, Rajkot.

4. Jain, Lalchand. *Jain sahitya mein Mahabharat: Pandav Puran ke vishesh sandarbh mein.* Vikram U, Ujjain.

5. Lamba, Jagdish Chander. *Swami Bhagavadacaryakrta Ramanandadigbijaya: Ek adhyayana.* U Delhi.

6. Malaiya, Ashalata. *Sanskrit shatak parampara aur Acharya Vidyasagar ke shatak.* HS Gour, Sagar.

7. Sambrey, Ashu L. *Ramayan Mahabharat va Agnipuran yanchya adhare Bharatateel teerth kshetranche anusheelan.* Nagpur U.

8. Satyawati. *Sankhya darshan ka dwandhatmak naitikwadi vishleshan.* Meerut U.

9. Sharma, Narayan Dutta. *Yajurved mein Agnishtoi yagya evem uska karmkand.* Meerut U.

10. Sharma, Surendra Kumar. *Auchitya-sidhant kee drishti se Kiratarjuniya Mahakavya ka adhyayan.* Meerut U.

11. Sudha. *Mahabhasya as a source book of grammatical philosophy.* U Delhi.

Hindi

1. Agarwal, Anita. *Teesra saptak ke kavi evam unke parvarti kavya mein adhunikta evam parampra.* Meerut U.

2. Asha, B.S. *The society as reflected in hindi and konkani proverbs.* U Cochin.

3. Bhatnagar, Meenu. *Saket kee bhasha mein pratyaya prayog.* Meerut U.

4. Chitra. *Hindi vakya rachna ka sambandh parak adhyayan.* U Delhi.

5. Desai, Vatsala. *Pushtimargiya hindi kavya mein pratifalit samajik chetna.* Vikram U, Ujjain.

6. Dhingra, Asha. *Ramcharit Manas kee bhasha ka kavyashastriya adhyayan.* U Delhi.

7. Gundim, S.H. *Nizam Rajya ke hindi vikas mein Arya Samaj ka yogdan.* Gulbarga U.

8. Jain, Indra. *Hindi Khari Boli' mein ling-nirdharan.* Meerut U.

9. Jain, Pramila. *Jainendra sahitya mein Gandhivad ka prayog.* Meerut U.

10. Kalra, Charanjit Lal. *Prem Chand ke upanyas aur varg sangharsh.* U Delhi.

11. Kesar, Archana. *Dogri upnaysen cha nari patra.* U Jammu.

12. Leekha, Anupama. *Manovishleshan parak upanyason ke sandarbh mein Illa Chander Joshi kee kala ka anusheelan.* RSU, Raipur.

13. Nagaich, Shree Gopal. *Sur aur Tulsi kee vatsalya avdhara ka tulnatmak adhyayan.* Vikram U, Ujjain.

14. Nambiasan, K. Narayanan. *Development of grammer in hindi and malayalam based on classical texts.* U Cochin.

15. Patel, Taraben Dahyabhai. *Adhunik hindi kee vishisht lambi kavitaon ka vastugat evam rupgat adhyayan.* SPU, Vallabh Vidyanagar.

16. Prem Parkash. *Swatantrayottar gadya sahitya mein vyanga.* U Delhi.

17. Radha, K. *Ramabhaktyetar kavyas of Tulsidas: A study based on philosophical and devotional aspects.* U Ker, Trivandrum.

18. Ram Niwas. *Ramcharitmanas aur Sar Ramayan Ramdas Krit ka tulnatmak adhyayan.* Meerut U.

19. Rama Rao, Addanki. *Hindi-telugu lok geeton mein ras yojana: Ek tulnatmak adhyayan.* Andhra U, Waltair.

20. Sahni, Vinay Kumar. *Dwivedi yugeen kavya mein samaj chitran.* U Delhi.

21. Satish Chander. *Kavyashastra ke vikas mein adhunik hindi acharyon ka yogdan: Sandarbh kavyatma.* HPU. Shimla.

22. Sharma, Hari Narain. *Shri Krishan Bhatt Kavi-Kalanidhi: Vyaktitva aur krititva.* U Raj, Jaipur.

23. Sharma, Saurabh. *Samajwadi upanyason mein itihasik bhautikwad.* Meerut U.

24. Shrivastava, Vinodini. *Bhartendu Mandal ke kavion ka sameekshatmak adhyayan.* Bhopal U.

25. Shukla, Meena. *Dr. Chandra Prakash Verma: Vyaktitva evam krititva:* Bhopal U.

26. Shukla, Raja Ram. *Adhunik hindi sahitya kee samajik peethika.* RSU, Raipur.

27. Singh, Rajesh. *Phanishwar Nath Renu' ke upanyason ka samaj shastriya adhyayan.* Meerut U.

28. Singh, Surendra Nath. *Prasad-sahitya ke srot kavya aur natak ke itihasik evam darshnik paripekshya mein.* **D. Litt** Meerut U.

29. Sinha, Archana. *Bimbon ke madhyam se Nirala kee srazan-prakirya ka adhyayan.* U Delhi.

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Population Mobility and Economic Development in Eastern India, by KAILASH MAHTO; 1985; xiii, 273p.; 51 Figs.; 51 Tables; Bibliography; Index; 26 cm.; Rs. 350/- $70.

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Studies on Rural Development: Experiences and Issues, by AJIT K. DANDA; 1984; xii, 96p.; List of Contributors; 8 Tables; Bibliography; Index; 26cm.; Rs. 100/- $20.

Revenue Administration: A Critical Appraisal, by V. RAJALAKSHMI; 1984: xiv, 224p.; 19 Charts; 3 Maps; 27 Tables; Annexures; Bibliography; Glossary; Index; 26cm.; Rs. 250/- $50.

Tribal Development in Madhya Pradesh: A Planning Perspective (*Tribal Studies of India Series—T* 112), by AJIT RAIZADA; 1984; xvi, 220p.; 32 Illus.; Map; 50 Tables; Annexures; Bibliography; Index; 26cm.; Rs. 280/- $56.

Life and Culture of Matrilineal Tribe of Meghalaya (*Tribal Studies of India Series—T* 113), by PRANAB KUMAR DAS GUPTA; 1984; xii, 210p.; 25 Figs.; 38 Illus.; 7 Tables; Appendices; Bibliography; Index; 26cm.; Rs. 325/- $65.

Area Planning for Regional Development, by K. MUNIRATHNA NAIDU (ed.); 1984; viii, 144p.; 4 Statements; 12 Tables; Index; 26cm.; Rs. 140/- $28.

For details and free catalogue, please write to:

INTER-INDIA PUBLICATIONS

WZ-96-V, Raja Garden, NEW DELHI-110015.

30. Sinha, Shobha. *Mohan Rakesh ke sahitya mein adhunikta bodh kee abhivyakti ke vividh swarup.* RSU, Raipur.

31. Srivastava, Lakhan Lal. *Hindi aur angreji vakya sanrachnaon ka vyatireki vishleshan.* Meerut U.

32. Srivastava, Surendra Nath. *Sant Kabir evam Gangadas ke kavya ka tulnatmak adhyayan.* Meerut U.

33. Tripathi, Prabhat Kumar. *Muktibodh ke kavya ke vishesh sandarbh mein prativadhta kee prakriti ka anusheelan.* HS Gour, Sagar.

34. Verma, Naresh Prasad. *Nirala kavya ke prerna satrot.* Mag U, Bodh Gaya.

35. Vibha. *Istriyon ke sanskar aur tyohar geet Ghaziabad Janpad ke adhar per : Sanklan, sampadan aur vivechan.* Meerut U.

Urdu

1. Maqsood Hasan. *Hamidulla Afsar Meeruty: Life and works.* Meerut U.

2. Syeda Izzath Unnisa Begum. *Urdu Safernamen.* OU, Hyderabad.

Oriya

1. Dash, Bhima. *Ama osabrata parbaparbanira srusti 'O' vikash.* Utkal U, Bhubaneswar.

2. Dash, Prafulla Kumar. *Upendra Bhanjanka sabda panditya.* Utkal U, Bhubaneswar.

3. Giri, Arbinda. *Sahityika Chandra Mohan Maharana.* Utkal U, Bhubaneswar.

4. Sahu, Basudeva. *Sri Jagannath in Oriya literature.* **D. Litt.** Utkal U, Bhubaneswar.

Marathi

1. Hatekar, N.R. *Swatantrya poorva marathi natkateel istri samasya, isvi* 1880 *te* 1940. Nagpur U.

2. Pande, Padmakar V. *A descriptive analysis of Mathuri Banjari Dialect spoken in Yeotmal Dt. of Maharashtra.* Nagpur U.

Kashmiri

1. Ambiye, Nirmala D. *A grammatical analysis of the taittiriya-padapatha.* U Poona.

2. Andrabi, Sayed M. Inayatullah. *Reference and conference in Kashmiri : A syntactic-semantic study.* U Poona.

3. Dhar, Nazir A. *A sociolinguistic study of the Kamraz dialect of the Kashmiri languages.* U Poona.

Malayalam

1. Moothathu, T.N. Narayanan. *A stylistic study of proverbs in Malayalam.* U Ker, Trivandrum.

Kannada

1. Dhanashree, Manik Rao. *Kannada dalli kaalgnyana sahitya.* Gulbarga U.

Telugu

1. Bhallamudi, Annapurna. *Chitra narata kavyanuseelanamu.* Andhra U, Waltair.

2. Buddanna, M. *Telugu vangmayam sivakavi yuga vysishityamu.* SKU, Anantapur.

3. Prakasa Rao, Sivalanka. *Bhavakavulupratibhavisphurti.* Andhra U, Waltair.

Geography

1. Gurjar, Ram Kumar. *Impact of irrigation on agriculture: A case study of the Rajasthan Canal Command Area, Stage I.* U Raj, Jaipur.

2. Kulkarni, Ashok Ramappa. *The geographical analysis of rural settlements in Belgaum District.* U Ker, Trivandrum.

3. Sharma, Mumta Mayee. *Human ecology of the Khada Tracts in Meerut District.* U Delhi.

4. Swain, Bijay Kumar. *A geographical analysis of sea ports in India* 1881-1981. JNU, Delhi.

History

1. Chejara, Chauthmal. *Parmar yugin Malwa ka samajik jeevan, 10vin sadi se 13 vin sadi tak.* Devi Ahilya, Indore.

2. Chetan Singh. *Socio-economic conditions in Panjab during the 17th Century.* JNU, Delhi.

3. Kohli, Deputy. *The material culture of Northern India during the Northern Black polished ware phase.* U Delhi.

4. Pandey, Hari Nandan. *Social life as depicted in the Yajnavalkya Smriti.* Mag U, Bodh Gaya.

ADDITIONS TO AIU LIBRARY

Aitken, D.J, ed. *International handbook of universities and other institutions of higher education.* London, Macmillan (c1983) ix, 1131 p.

Association of Commonwealth Universities, London. *Technological innovation: University roles: The report of proceedings of the 13th Congress of the Universities of Commonwealth, Birmingham,* 1983. London, Author, 1984. 431p.

Bailey, Charles. *Beyond the present and the particular: A theory of liberal education.* London, Routledge & Kegan Paul (c1984) xii, 257p.

Bowman, Mary Jean and others. *Education and income.* Ed. by Timothy King. Washington, World Bank, 1980. viii, 315p.

Cameron, J. and others, ed. *International handbook of education systems. 3V. VI. Europe and Canada.* New York, Wiley (c1983) viii, 729p.

Corner, Trevor. *Education in multicultural societies.* London, Croom Helm (c1984). 288p.

Elliott, Geoff. *Video production in education and training* London Croom Helm (c1984) 150p.

Eisemon, Thomas Ewen. *Scientific profession in the third world.* New York, Praeger, 1982. 186p.

Gupta, Mohan Prakash. *Education systems: Anaylsis and reforms with special reference to agricultural education.* Delhi, Agricole Pub. Academy, 1984. xii, 162p.

Jones, R. Kenneth. *Sociology of adult education.* Hampshire, Gower (c1984) ix, 159p.

Lewis, Ian. *Student experience of higher education.* London, Croom Helm (c1984) 178p.

Midwinter, Eric, ed. *Mutual aid universities.* London, Croom Helm (c1984) 159p.

Nayana Tara, S. *Education in rural environment.* Delhi, Ashish 1985. xii, 143p.

Oxenham, John, ed. *Education versus qualifications? : A study of relationships between education, selection for employment and the productivity of labour.* London, Allen & Unwin (c1984) x, 146p.

Padmanabhan, C.B. *Financial management in education.* Delhi, Selectbook, Pub., 1984. 300p.

Pal, S.K. and Saxena, P.C. ed. *Quality control in educational research.* Delhi, Metropolitan, 1985. xxiii, 660p.

Patel, Tara. *Development of education among tribal women.* Delhi, Mittal, 1984. vi, 198p.

Phillipson, Nicholas, Ed. *Universities, society, and the future: A conference on the 400th anniversary of the University of Edinburgh* 1983. Edinburgh, Edinburgh University Press. xiv, 319p.

Pinto, Marina. *Federalism and higher education: The Indian experience.* Hyderabad, Orient Longman (c1984) xiii, 250p.

Semin, G.R. and Manstead, A.S.R. *Accountability of conduct.* New York, Academi 1983. 224p.

Terry, Colin, ed. *Using micro-computers in schools.* London, Croom, Helm, 1983. 192p.

Thyagarajan, S., Comp. *Indian Cricket* 1984. Madras, Kasturi & Sons, 1984. xvii, 728p.

UNESCO. *World-wide inventory of non-traditional post-secondary educational institutions.* Paris, Unesco, 1984. xvii, 558p.

Walker, Stephen. *Learning theory and behaviour modification.* London, Methuen, 1984. 192p.

Watson, Keith, ed. *Dependence and interdependence in education: International perspectives.* London, Croom Helm (c1984) vii, 222p.

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KARNATAKA REGIONAL ENGINEERING COLLEGE

SURATHKAL, DAKSHINA KANNADA,
P.O. SRINIVASNAGAR-574157.

Dated : 8-1-1985

STAFF RECRUITMENT

Applications in the prescribed form are invited for the following posts so as to reach the Principal not later than **28-2-1985.**

1. Professors : 2 (two) Posts—Civi Engineering-1, Mining Engineering-1. (Rs. 1500-60-1800-100-2000-125/2-2500) Total salary inclusive of allowances in the minimum of the grade Rs. 2,724/-.

2. Asstt. Professors : 2 (two) Posts—Electronics & Communication-1, Mining Engineering-1. (Rs. 1200-50-1300-60-1900). Total salary inclusive of allowances in the minimum of the grade Rs. 2,375.30.

3. Lecturers : 15 (fifteen) Posts—Civil Engineering-1, Applied Mechanics-5, Electrical Engineering-1, Electronics & Communication-5, Mechanical Engineering-2, Metallurgy-1. (Rs. 700-40-1100-50-1600) Total salary inclusive of allowances in the minimum of the grade Rs. 1,540-70.

Higher starts in pay will be considered in deserving cases. Qualifications for the post of Professor, Assistant Professor and Lecturers will be as prescribed by U.G.C./A.I.C.T.E. If candidates with Post-graduate qualifications are not available or not found suitable for the post of Lecturers, first class Engineering Graduates will be considered for appointment as Lecturers.

In case a candidate for the advertised post is not found suitable for that post, the next lower position can be offered to the candidate, if he is found suitable for the lower position.

Further details concerning qualification etc. will be supplied along with the application form.

Application forms and details of prescribed qualifications and other particulars can be obtained by sending a crossed Indian Postal Order for Re. 1/- (for each application form), payable to the Principal of the College at Srinivasnagar Post Office along with a self-addressed envelope of size 25×10cm. affixed with postage of Rs. 1-10.

B.S. Basavarajaiah
PRINCIPAL

BHOPAL UNIVERSITY

BHOPAL

No. : 276-1/Dev/JRF/UGC/85 **Dated : 25th Jan., 1985**

ADVERTISEMENT

Applications are invited for award of UGC Junior Research Fellowship from amongst the candidates who have qualified in the National Level Test conducted by the UGC in the following subjects :—

Physics, Life Science, Geology, Economics, Psychology and Sociology.

The value of the Fellowship is Rs. 1,000/- p.m. and Rs. 3,000 p.a. as contingent grant in Humanities and Social Sciences and Rs. 5,000/- p.a. in Science subjects.

The tenure of the fellowship is of two years in the first instance and may be extended for next two years on the basis of satisfactory progress report.

Application forms on the prescribed proforma should reach the Registrar latest by **15.3.1985.**

No TA/DA will be paid to the candidates called for interview.

Someshwar Gupta
ACTING REGISTRAR

TATA INSTITUTE OF SOCIAL SCIENCES

P.O. BOX NO. 8313, SION-TROMBAY ROAD, DEONAR, BOMBAY-400088

Applications are invited for the following posts. The prescribed form along with the details of qualifications, experience, etc., should be obtained from the above address either in person or by post along with a stamped (Rs. 1.50) self-addressed envelope superscribed "Request for application form for teaching posts".

I. **Professor in Social Work** (one post) in the scale of pay of Rs. 1500-60-1800-100-2000-125/2-2500. Total emoluments at the minimum of the scale Rs. 3027.25 per month, and at the maximum Rs. 4709.75 per month.

II. **Reader in the Department of Personnel Management and Industrial Relations** (one post) in the scale of pay of Rs. 1200-50-1300-60-1900+D.A. and other allowances. Total emoluments at the minimum of the scale Rs. 2727.25 per month and at the maximum Rs.3638.75 per month.

III. **Lecturers** (7 posts) : One in Social Work; Two in the Department of Urban and Rural Community Development; Two in the Department of Social Welfare Administration;One in Statistics in the Department of Research Methodology; and One in the Unit for Audio-Visual Records; in the scale of pay of Rs. 700-40-1100-50-1600+D.A. and other allowances. Total emoluments in the minimum of the scale will be Rs. 1867.75 per month and at the maximum of the scale will be Rs. 3184.75 per month.

The last date for request for application form **23-2-1985**.

N. Krishnamoorthy
REGISTRAR

REGIONAL ENGINEERING COLLEGE, CALICUT

P.O. CALICUT REC
KERALA : 673601

Advertisement No. P1-9360/84
Dated : 18-1-1985

(This advertisement is in supersession of the advertisement No. P1-9360/84 dated 10-12-1984).

Applications are invited in the pescribed form for the following posts:

I. **Professors**	**No. of post**
1. Civil Engineering P.G. Professor in Traffic and Transportation Planning with special emphasis on Water Transportation.	1 permanent
2. Electrical Engineering P.G. Professor in Energetics	1 permanent
3. Applied Mechanics	1 (likely vacancy)

Qualifications

An eminent scholar with a Doctorate Degree in the subject concerned and published work of high quality actively engaged in research. Ten years experience of Teaching and/or research. Experience of guiding research at Doctoral level.

OR

An outstanding Engineer/Technologist with established reputation who has made significant contribution to knowledge.

Scale of Pay : Rs. 1500-60-1800-100-2000-125/2-2500 (U.G.C). Total emoluments at the minimum of the scale : Rs. 2600/-

Age as on 1-7-1985 : Maximum 50 years.

II. Assistant Professors

1. Civil Engineering Traffic and Transportation (PG course)	1 permanent
2. Electrical Engineering Energetics (PG course)	1 permanent

Qualifications

Essential

(i) A first or Second Class Postgraduate Degree or equivalent qualification in the appropriate field. Those having second class Postgraduate degree must have First Class in the basic degree in Engineering or Technology.

(ii) 5 years experience of which 3 years shall be teaching in technical institutions of University standard in the field concerned and the rest may be in industry and/or research.

Note

Doctorate degree holders need have only 3 years' teaching experience in institutions of University standard.

Desirable

(i) Published work of high standard.
(ii) Experience in guiding research.
(iii) Specialised knowledge in one or more fields.

Scale of Pay : Rs. 1200-50-1300-60-1900/- (UGC). Total emoluments at the minimum of the scale : Rs. 2300/-.

Maximum age as on 1-7-1985 : 45 years.

III. Lecturers in Engineering Department

Department	**No. of post**	
Mechanical	3	All posts are temporary, but likely to continue.
Civil	5	
Electrical & Electronics	5	

Qualifications

Essential

(a) Master's degree in appropriate field in Engineering Technology (wherever candidates with Master's degree are not available or are not found suitable, first class Engineering graduate will be considered subject to the condition that such candidates shall obtain Master's degree within a period of five years, failing which they shall not be entitled for drawing further increments).

(b) Consistently good academic record with a Bachelor's degree in Engineering/Technology. First class at Bachelor's degree and/or Master's degree level.

Note

For the post of Lecturer in Mechanical Engineering, candidates having Master's degree with specialisation in Engineering Mechanics/Applied Mechanics (irrespective of their branch in the basic Engineering degree) are also eligible to apply).

Scale of Pay : Rs. 700-40-1100-50-1600/- (UGC). Total emoluments at the minimum of the scale Rs. 1533/-

Maximum age as on 1-7-1985 : 40 years.

IV Assistant Proctor : 1 Permanent.
Qualifications

(i) A first or second class Master's Degree in Arts, Science or first class Bachelor's Degree in Engineering from a recognized University.

(ii) Teaching experience for a minimum period of 5 years in a College or institution of equivalent standard.

Scale of Pay : (U.G.C.) Rs. 700-40-1100-50-1600/-.

Total emoluments at the minimum of the scale Rs. 1533/-.

Maximum age as on 1-7-1985 : 40 years.

V. **Deputy Registrar :** No. of post (1) Probable

A first or second class degree in Arts, Science, Commerce or Business Administration. Not less than 12 years experience in a responsible position either in academic, business organisation or in Government Department. Experience in financial matters such as Budgeting, Store purchase, work connected with meetings.

Scale of pay : (State scale) Rs. 750-30-990-40-1150-50-1450/-+D.A. at Kerala Government rate.

Total emoluments at the minimum of the scale : Rs. 1295/-.

The State scale is likely to be revised to U.G.C. scale of pay.

Maximum age as on 1-7-1985 : 45 years.

VI. **Hostel Manager** : No. of post (1) Probable

Must be a graduate. Preference being given to those with Account test or adequate knowledge of accounts. Must have put in at least 5 years in administration. Persons who have got experience in organisation preferably in hostels, reputed catering establishments will be preferred. Must have good personality and ability to manage hostel servants and to deal with students.

Scale of Pay (State scale) : Rs. 750-30-990-40-1150-50-1450/-+D.A. at Kerala Government rate.

Total emoluments at the minimum of the scale Rs. 1295/-

Maximum age as on 1-7-1985 : 45 years.

Age limits specified above shall not be applicable in case of candidates already in the Calicut Regional Engineering College service.

Any of the qualifications fixed in respect of the above posts can be relaxed by the Selection Committee in case of exceptionally qualified and meritorious persons.

Higher starting pay is admissible in deserving cases. Candidates attending interview will be paid single second class to and fro railway fare or bus fare by the shortest route.

Any candidate applying for more than one post shall send separate application for each post.

The College does not guarantee that all the applicants would be invited to be interviewed for selection to the respective posts advertised. The Screening Committee of the Board of Governors has power and authority to decide on the applicant to be called for interview after reviewing the individual merit or otherwise of the applicants based upon their respective applications, and the Committee's decision is beyond challenge by the applicants. The college also reserves the right not to fill up any or all the posts advertised, without assigning any reason therefor.

Application form can be had from the Registrar, Regional Engineering College, Calicut, Kerala PIN : 673601 on requisition accompanied by a self addressed and 90 paise stamped envelope (25 cm× 10 cm) together with a crossed postal order for Rs. 2/- in his favour. Name of the post for which application is intended shall be specified in the requisition.

Attested copies of certificates showing qualifications, age and experience should be sent along with the application in the prescribed form, together with a Registration fee of Rs. 10/- in the form of crossed Indian Postal Order drawn in favour of the Registrar, Regional Engineering College, Calicut.

Candidates in service shall submit their applications through proper channel or shall produce "No objection certificate" at the time of interview.

Completed applications should reach the Registrar at the address shown above on or before **1-3-1985**.

Incomplete/late applications and applications without the requisite registration fee will not be considered.

Principal & Secretary

SHREEMATI NATHIBAI DAMODAR THACKERSEY WOMEN'S UNIVERSITY

Applications are invited in the prescribed forms available from the S.N.D.T. Women's University Office, 1, Nathibai Thackersey Road, Bombay-400020 on payment of Rs. 5/- (by M.O./Indian Postal Order/in cash) for the post of UNIVERSITY LIBRARIAN and HEAD, S.H.P.T. SCHOOL OF LIBRARY SCIENCE of the University, at Bombay, so as to reach the undersigned not later than **February 23, 1985**.

Pay Scale

Rs. 1500-60-1800-100-2000-125/2-2500 plus admissible allowances (Total initial emoluments about Rs. 3027.25 per month).

Qualifications & Experience

(a) First or Second Class M.Lib. Science.

OR

M.A./M.Sc./M.Com. plus a First or Second Class B. Lib. Science or Diploma in Library Science.

(b) Atleast ten years' experience as Librarian or in a responsible professional capacity in a University Library.

(c) Ph.D. degree or equivalent research work in the field relevant to the profession.

Note

(1) Only suitable candidates will be called for interview.

(2) Knowledge of Marathi and Gujarati essential, besides fluency in English.

(3) Higher starting salary may be considered in exceptional cases if recommended by the Selection Committee.

Smt. K.H. Bhansali
REGISTRAR

BANASTHALI VIDYAPITH

Banasthali Vidyapith, the national institution for women's education, has been doing pioneering work in its field over last half a century. Its attempt is to bring about an all round development students' personality expressing a synthesis of the spiritual heritage and scientific achievement of the East and the West.

The Vidyapith which has a band of devoted teachers and workers lays great stress on value inculcation and character building.

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He should have capacity and competence to provide direction, over-all supervision and control of day-to-day, working of accounts, audit and finance.

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THE UNIVERSITY OF KASHMIR

NOTICE

The last date for receipt of applications for the Post of Deputy Librarian advertised vide this office Notice No. F.10 (Appp-Gen) KU/84 dated **28-11-84** is extended upto and including **19-2-1985**.

Moh'd Shafi Khan
DEPUTY REGISTRAR (Admn.)

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University News

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FEBRUARY 16, 1985

Re. 1.00

ROORKEE UNIVERSITY CONVOCATION

Prof. Bharat Singh, Vice-Chancellor, conferred Honoris Causa degrees of Doctor of Social Sciences on Sri R. Venkataraman, Vice-President of India, Doctor of Sciences on Prof. C.N.R. Rao, Director, Indian Institute of Science, Bangalore and Doctor of Engineering on Prof. Jagdish Narain, Secretary, AIU.

BIRLA INSTITUTE OF TECHNOLOGY

MESRA : RANCHI

ADMISSION 1985—B.Sc. Engg. and B. Pharm. (4-Year) DEGREE COURSE

Entrance Examination for admission to (1) B.Sc. Engg. (4-Year) Degree Course in Civil, Electrical, Mechanical, Electronics & Communication, Computer and Production Engineering, and (2) B. Pharm. (4-Year) Degree Course in Pharmaceutical Sciences will be held on May 25 and 26, 1985 at the following centres:

Allahabad, Agra, Bhagalpur, Bhubaneswar, Bangalore, Bombay, Calcutta, Chandigarh, Delhi, Gauhati, Hyderabad, Jamshedpur, Jaipur, Lucknow, Madras, Muzaffarpur, Nagpur, Patna, Sindri and Ranchi.

provided sufficient number of candidates opt for the proposed centres.

Qualifications

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THOSE APPEARING THIS YEAR AT THE VARIOUS QUALIFYING EXAMINATIONS ARE ALSO ELIGIBLE TO APPLY. Seats are reserved for SC/ST candidates.

The last date for receipt of completed application form is **15th April, 1985.**

Application form can be obtained by post on pre-payment of Rs. 10/- by Crossed Postal Orders, payable to the Registrar, Birla Institute of Technology, Mesra, Ranchi. The request should accompany a 'Slip' of size 10cm. x 4cm. containing the address of the applicant, clearly mentioning the form required i.e. B.Sc. Engg. or B. Pharm.—as the case may be.

January, 29, 1985.
Mesra, Ranchi-835215.

J.B. Saksena
REGISTRAR & O.S.D.

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Editor :
M. S. RAMAMURTHY

Internal Evaluation System Favoured

Dr. Sukhdev Singh, Vice-Chancellor of Punjab Agricultural University, Ludhiana, stressed on the need to follow the "evolutionary mode to change the conventional examination system into the internal evaluation system to avoid conflicts and subsequent pressures." He made these remarks while inaugurating a workshop on "internal evaluation and assessment system" at the Senate Hall of Punjabi University, Patiala, on January 21, 1985.

Dr. Sukhdev Singh described the internal evaluation system as a process of telling a student what he lacks in his learning of a particular course. Whereas it guarantees absolute freedom to the students to "cross-examine" their teachers, it, by implication, makes the teachers more responsible and more alert about the latest developments relevant to their subjects.

He advocated the system of "un-announced" schedule of examinations to keep the students all the time on their toes. This will also subsequently minimise the irregular attendance of the classes by the students. Dr. Sukhdev Singh said that teachers' "integrity of character" was a pre-requisite to the success of internal evaluation system. He should not cave in for the "mercy appeals" and other pressures, internal or external, to maintain the "real character" of the system.

Dr. Sukhdev Singh emphasised for screening the abilities of the students at the very outset of the semester to avoid any repercussions at a later stage.

While tracing the evolution of the education system from the ancient to the modern, he cautioned against the use of difficult terminology to facilitate a clear communication between the teacher and the taught. He described a disciplined students community as a pre-requisite to the introduction of the internal evaluation system.

Dr. Sukhdev Singh said the internal evaluation system was much less expensive and was more speedy then the external evaluation system.

Dr. S S. Johl, Vice-Chancellor, Punjabi University, said that the internal evaluation system more or less ensures an overall objectivity into the nature and process of evaluation. The teachers get absolutely "exposed" in the process of showing any bias or prejudice towards any student as the system was an "open secret". He stressed for making examination as a part of education. It amounted to "correcting" the weaknesses in the students and not just outrightly examining them.

Dr. Johl said that it enables a teacher to incorporate the latest relevant development in the course as he was free to plan his teaching. Malpractices of the terminal examination system also get eliminated in the system, he added.

Active participation by the students and teachers in the total process of evaluation is ensured resulting into better teacher-taught relationships with ills of secretiveness removed. The system also helps in removing "externalities and uncertainties" thus unleashing distinct advantages over the external evaluation system. It also provides the students with a recourse to verify their performance and know what they did not know, Dr. Johl said.

Dr. Johl said "range-grading" which is a built-in element in the internal evaluation system is advantageous over the "point-grading" technique of the traditional evaluation system.

The workshop has been organised, Dr. Johl said, to form an "informed opinion" to chalk out the modalities and draw an outline about its implementation in the Punjabi University.

Delinking Degrees from Jobs

V. Natarajan*

The recent pronouncements of the new government in respect of new educational policy and employment, have been to reiterate the need for looking at recruitment to various jobs in different sectors with an eye on delinking degrees from jobs. On the face of it, it may look paradoxical since the hue and cry raised in the earlier decades was to make education vocationalised and job oriented. There is more to delinking degrees from jobs than meets the eye. What is sought to be achieved by delinking is much more crucial and important than the delinking *per se*. In the past, it has been the experience of the employment sector in general and the white-collared in particular, to attract 75 to 80 per cent of graduates into 'clerical cadre' in public/private sectors, management industry, trade, commerce, business, banking and the like. There was an unprecedented pressure on the higher education system to produce graduates in arts, science, humanities, commerce (excluding professional) who all eventually took up clerical jobs that did not require infact any degree of any kind. Since the possession of a degree was a minimum requirement for these jobs, all these graduates, no matter what their area of specialization was, got into these clerical posts which required only mastery of skills in note taking, comprehending, summarising, typing, shorthand, record keeping, filing, information storing and retrieving and the like. If this reality is to be met by both the educational system and the employment sector, then higher education is to be restructured to have a small component of education and a comparatively large component of training in these skills. While a majority of students after they are identified fit and competent for these restructured courses, then those really having an aptitude for specializing in arts, science, commerce and so on, can be provided with opportunities. Therefore what needs to be done is to have a system of national testing or examining over a period of time after the 10th to streamline products at this level for vocationalised courses and also another national level testing or examining spread over a period of time after 12th to streamline them to restructured courses for purposes of both identifying the more competent for higher education in different disciplines and also those for whom the skill oriented courses of study are meaningful. Some of the colleges now which are non-viable and also not fully equipped for higher education in different disciplines, can now be reorganised into colleges that provide basic skills as outlined earlier. Thus the twin objective of delinking degrees from jobs and relieving the pressure on higher education can be achieved. Shri L.K. Jha, the renowned economist, made an excellent suggestion that a national level examination at +12 should be administered and selection made to streamline those successful to various jobs and provide them with 3 years of training in the skills identified to be required for these job positions. What is needed here is an understanding of skills required for clusters of jobs with a professional outlook to growth and development thus, enabling the trained ones to acquire speed, accuracy and efficiency in operations. In simple terms there should be general education, training in skills, training in use of modern technologies (even a typist has to handle today an electric or electronic typewriter and a word-processor computer in addition to dictaphones etc.) One suggestion that was made by Mr. Jha is worth considering and that is, that the employer will be participating in the financing of education and training. Such participation of industry and trade in technical education has to some extent been built but a lot needs to be done in this area as well.

Vocationalization has a direct effect on delinking of degrees from jobs in so far as it provides opportunities for skilled persons to acquire jobs in their specialist vocations without having to undergo the rigours of a degree course which to a large extent is a meaningless pursuit for a majority of those in them. The vocationalization that is meant here, are those of crafts, arts, technician and professional at lower levels of profession (technician, worker, supervisor, skilled workmen, para-medical persons, trademen and the like). Specialist skills are to be developed in these students of vocationlized courses to make them primarily skilled workers. The important way to strengthen vocationalization is through a systematic and realistic manpower needs assessment and projection in these areas. If vocationalization is to succeed, it has to be organised and monitored systematically with the cooperation of local, regional and national agencies involved in manpower assessment and also the secondary education organisations. One facile way of building vocationalization is to restructure secondary schools which are not at the moment capable of providing good quality secondary education into vocationalised schools, each one of them concentrating on one or two vocations, thus building up infrastructure facilities and expertise for training in one or two select vocations.

The national level examination at +10 will be organised keeping in view that selection of students to appear in various aptitude tests will be based on the information provided by the school in relation to achievement over a period of a year earlier in order to make the 10+ level examination more meaningful and valid. Students who are selected

(*Continued on page* 6)

**Project Director* (*Exam*), *AIU, New Delhi.*

Education for One World

A Long-term Perspective

Biman Sen*

Information Service
25 FEB 1985
C.F.I.R.I., MYS

The main object of this paper is to attract the attention of the international educational planning specialists and administrators to certain basic facts and issues, which are relevant for drawing up any blue print for future global development and international understanding for peace and also to serve as food for thought.

Introduction

The world has witnessed rise and fall of many civilizations; but a situation which might lead to complete annihilation of mankind was never created. To-day, advancement of science and sophistication of technology have created an unique situation. It has brought the mankind at the cross-road. There are two choices before 'Man'—either to take the path leading to the total destruction and annihilation of the world or create a condition for a global society, based on common heritage of man, in which one could live in peace and harmony. It is hoped that wisdom of man will ultimately prevail over the idiosyncaries of a few individuals responsible for creating tension in the world.

Dynamics of evolution teaches us that the progress of mankind is perpetual, seeking for better and better quality of life—a process of continuous change, as aptly expressed by the Buddhist doctrine of "Anitya" (continuous change in all forms). The past which has gone can never come back—but it cannot be forgotten. Its experiences are valuable, especially to assess and evaluate the causes of failures and achievements to chalk-out a better path for future development. The most dangerous element of the past are its traditions which, some time, act against progress and try to lead the society to stagnation. Our contemporary civilization is a victim of these traditions. Threat of war, social injustice, exploding population, pollution of environment, destruction of forest wealth, violation of human rights, extreme poverty, etc., which drive people to despair, are man-made and can and should be reversed by charting a well-defined path of progress and development for a better future.

In to-day's world, it is widely realized that neither a man can live in an island of his own nor a nation can survive in isolation. This realisation is forcing nations, having some contemporary outlook, to forge a common society for protecting their interests in the same way as the tribal societies used to do in the past. This has led to north-south deadlock for new economic order, super-power rivalry, inter-religion conflicts etc. This is a logical development in a transitional stage of human civilization striving towards a universal global society. One should not forget that all round development and vital needs of all mankind irrespective of colour, creed or nationality is essential. In this great enterprise all nations and people must work together in a spirit of co-operation and understanding.

Education—A powerful instrument

Development of human resources in a proper perspective, is essential and vital for all developmental activities which are designed and implemented by man for his own benefit. Education is responsible for proper development of human resources. It has, therefore, a decisive role to play in forging the future of man. Education is the most powerful instrument in the hands of men as it is the essential tool for training of minds of young people, on whom depends the whole future of mankind. Power of education can be aptly described in the words of one of the most distinguished intellectuals of the early twentieth century Mr. H.G. Wells, when he said, 'Human history becomes more and more a race between education and catastrophe'. In one of his novels, he visualised the shape of the things to come, the nature and dimensions of the catastrophe. He had, however, pointed out a silverlining that ultimately humanity would survive and forge itself into one single global community living together in peace and harmony. Can his dream come true? Answer to this lies in the hands of those who are responsible, to-day, for planning and administration of education for future, as Senator J. William Fulbright of U.S.A. once remarked "Education is a slow moving but powerful force. It may not be fast enough or strong, to save us from Catastrophe, but it is the strongest force available".

The analysis of the history of development of education since the primitive age makes it clear that education, so far, has been used as powerful instrument only for exploitation (one group of people by other) instead of uniting different communities into a single integrated human society based on common human heritage and justice. This has created a crisis of confidence among nations and between older and younger generations. It is now high time that the entire development of education in the world be reviewed and

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**Executive Director, International Education Consortium.*

Paper presented at a Group meeting in NIEPA some time ago.

reoriented to serve the purpose of development in a more broader perspective.

Development—Complex process

One cannot forget that development is very complex process involving all sectors of human activities which are not only inter-related and interdependent in a very intricated fashion but also form a very complex integrated system, in which education is only a sub-system.

Planned development is a process necessarily bringing development within a time frame scope and with a clear long term perspective and definite objectives in view. Lenin, the author of the scientific planning for economic development of USSR with definite objective in view wrote—"Do not be afraid of long term plans for without them you cannot achieve economic revival. Let us devote all our energies in the localities to their fulfilment". While underlining the decisive role of long term planning, he insisted the unity between long-term and short term planning. In other words, for scientific planning of developmental activities there should be a long-term strategy and short-term plans action dovetailed into one another. Educational planning is an advance planning and a sub-system of the total development process. Since the impact of whatever is planned in education sector during next decade would be felt only in the 21st century, an educational planner will have to first stimulate a social system for 21st century with a clear objective in view taking into consideration past experiences and contemporary situation and their future implications and changing trends, because the present situation in the world cannot be allowed to continue for long, if humanity has to survive.

Education for one World

When in June 1945, the United Nations Charter was signed at San Francisco, only a very few people knew about the impending release of nuclear energy, (first nuclear test explosion took place on 16th July, 1945), yet the world leaders, who signed the charter, visualised that the survival of mankind would be possible only through international understanding and peace. UNESCO charter was signed at the end of 1945 to bring about international understanding and collaboration through the most powerful instrument for change i.e. education in its broadest sense, comprehending science, technology, culture and communication which are the essential elements of evolution of a man from animal existence to a modern man. Education again is responsible for training of mind, which has also been emphasised by UNESCO, in its preamble; "Since wars begin in the minds of man, it is in the minds of men that the defence of peace must be constructed".

These words, however, only remain in print. Hardly any concrete step has been taken to make education, an essential instrument of change, to fulfil the ultimate objective to create conditions for a tension free world where man could live with dignity and peace and harmony. Even to-day, in most of the countries education is reoriented to short-term goal, mainly as an instrument of exploitation, (in some cases it is highly sectarian) which instead of spirit of humanism is responsible for breeding chauvinism leading to international misunderstanding, lack of collaborative spirit, formation of power blocks etc. Unless this tendency is arrested, the survival of mankind will be difficult as the world will drift towards the path of total destruction.

Now the question is how to reverse this fissiparous tendency? What type of education can effectively counteract this ? This can possibly be achieved by long-term planning strategy for educational development to make it an instrument of unity with short-term action plans for transitional needs to reach the utopian goal of one world. And to achieve this, there is a need of sincere efforts to create an universally accepted education system with a common goal and in-built flexibilities to accommodate local environmental needs. Education has essentially one objective i.e. total development of an individual by virtue of which, he/she can adapt any situation in life. In other words, modern education has twin objectives: development of an individual and to prepare him for a specific function or a job as a part of the human resources development for economic and industrial growth. Therefore, education cannot be considered in isolation. It has to be considered in relation to the country's overall development policy and strategy in particular and the global needs in general. Since education is an integrated system, no single sector of education can be considered again in isolation. This makes things easier for educational planners to formulate an universal system of education on a global basis by taking second objective as primary.

Structure and Pattern

In this highly sophisticated age of science and technology, production of scientific, technical and managerial manpower becomes the key to the success of all developmental activities. The quality and type of such manpower depend on the competence of the delivery system. Therefore, education at the tertiary sector more or less dictates the basic structure and pattern as well as contents of education at the other levels. Since science and technology are universal, and there is nothing called western or eastern science or separate science and technology for developed and developing societies, types, quality or competence of manpower required for development of science and technology, their application and management for economic and industrial development of a country cannot be basically different. Nor the knowledge and competence of the people using them in different countries can be different. Therefore, logically the basic structure, pattern or contents of education should not differ very much from country to country. Unless this fundamental position is understood the difference between the developed and developing countries will never be bridged, rather it would widen more and more. And, therefore, neither wars would be stopped nor peace would be obtained. If this cardinal principle is accepted, it would be easier to formulate an ideal system of education universally acceptable by all.

It has, more or less universally been accepted in principle that in a highly sophisticated age of science and technology, with explosion of knowledge and information and their high rate of growth, at least twelve years of schooling is absolutely necessary before any one is permitted to enrol at the tertiary level of education or entry into the world of work. How this twelve years of schooling should be divided into foundation and secondary education, needs to be determined on the basis of environmental situation and availability of resources. However, ultimate aim should be to have ten years of foundation education followed by at least two years of higher secondary education. This should be the long term strategy. For short-term action plans duration of higher secondary education should be flexible varying between two to four years according to needs. Duration of the tertiary level education leading to first degree may vary between three to five years according to the needs of the subject field or professional requirements.

Tertiary level education has to be tuned to economic and industrial policy and its management. So planning education at this level is fairly easy and a comparative study shows that, more or less, a universal pattern is followed throughout the world. Marginal adjustment also will, however, be needed to reach the same standard keeping in view the short term needs of a country.

It may not be difficult to plan future pattern of foundation education as a long term strategy. It should be of ten years duration in order to acquaint an individual fully with the basic knowledge and information of the scientific and technological environment in which one has to live rest of one's life and also to lay the foundation for the higher education.

Most difficult task for an educational planner is the planning of secondary education (higher secondary) which is the most important and vital sector of an educational system because:

(i) Secondary education forms a link between foundation education and tertiary education and at the same time is a bridge between education and world of work for a larger number of persons;

(ii) Psychologically and physiologically, it deals with a very sensitive age group who want to retain all the privileges of childhood but try to exercise all the prerogatives of adulthood without having adult understanding or responsibility;

(iii) It serves as a transition between "Pupilship" to 'student' status. At this stage academic responsibility has to be gradually passed on to the taughts from the teachers;

(iv) It has to cater the long term needs of the tertiary education as a basic input and at the same time the immediate need of the society;

(v) It is also responsible for development and supply of vital man-power needs at the middle level for economic and social development.

Taking into consideration various factors, Secondary Education needs to be dynamic, flexible responsive to quick change and diversified. For better efficiency this can be with the help of modular system of education, and training with some core modules and specialised modules.

Because of the faster rate of growth of information and knowledge, education to-day cannot but be a life long exercise, and therefore, for better access to education for all groups, the modular pattern should be adopted at all levels of education.

The Content of Education

Since the world is moving towards forging a common human society and now passing through a transition of regional societies comprised of different nationalities in a particular region, in order to accelerate the process, it is necessary to reorient the educational system in a common basic pattern. At the same time, it is also necessary to have a critical review of the contents of education at all levels and to remove portions which stand in the way of achieving the common goal.

One of the most outstanding achievements of the human society, which differentiates a man from animals, is the development of a complex system of communication. It is this communication system which has led to all the achievements in science and technology. It is, therefore, imperative that teaching of languages should start from the beginning and be made compulsory subject throughout the period of institutionalised education. If education has to be an instrument of change to bring the world together and also to get the full benefit of science and technology, at least two languages should be taught at the school stage right from the initial stage of education; one for internal consumption and other for communicating with the outside world. The second most important subject which needs to be included in the curricula of the school right from the starting of education of a child, is mathematics which helps to develop logical thinking and the power of analysis and synthesis. In order to acquaint an individual with the modern scientific and technological environment, it is necessary to introduce the study of science from the early stage of education. To develop coordination between thinking and physical actions, work experience should be built into the school curricula from 1st year of education. It is obvious that physical education and study of hygiene should be a part of school education from the beginning in order to develop self discipline, tolerance, social responsibility etc.

If one analyses the cause of development of a chauvinistic attitude in an individual, it will be clear that study of political history and political geography, as they are taught at present, are responsible for developing this attitude. Therefore, these subjects should be taught only when an individual is matured enough to analyse the facts in true perspective. Instead children should be familiarized with the facts related to total contribution of man for development of human society. This can be achieved through graded studies of history of science and technology—history of civilization without political or social overtones in order to emphasize the unity of man and not the diversity which divides one from the other.

At the higher secondary stage the core modules should contain graded study of languages, sciences, and mathematics. Rest of the subjects may be included in the specialised modules so that an individual may choose a group of such modules suited to his/her competence and choice.

As regards tertiary level, contents of education should correlate the economic and technological environment of a country and the national needs.

The details of the contents of education at various levels should be carefully worked out during the next four or five years keeping in view the needs of the 21st century society when people will enjoy more leisure for creative work than to-day due to sophistication in technology. Therefore, one of the most important components of education will be education for creative work and utilisation of leisure in an effective manner. This will need stimulation of a global society in the pattern suggested by people like H.G. Wells.

If ultimately nations desire to translate the 'preamble' of the Unesco into action, it is necessary that at the initial stage there should be exchange of ideas and views on a regular basis and at regional and global levels as often as possible. This would also provide a ground for better understanding of problems.

In this context, it may not be out of place to mention that it was from the Asia that one time the message of humanism was spread to all over the world, and therefore, let once again, Asia lay the foundation of a universal system of education for training of future generations to enable them to forge a common global human society based on humanism and common heritage of man so that man may live in peace and with dignity and not in constant tension and fear of annihilation. ☐

Delinking Degrees from Jobs

(*Continued from page* 2)

for vocationalized courses will be admitted in these vocational schools and the rest of them will be admitted into secondary schools for a 2 year higher secondary, at the end of which there will be a +12 national level examination to select students to undergo restructured courses (that have a large emphasis on training and skills) while a few at the top who are competent to undergo special education in arts, humanities, science, commerce will be admitted to colleges running these courses of study. The two national level examinations will have to be carefully planned, prepared, administered and analysed over a period of time in order to make it serve the purposes intended. This will not only delink degrees from jobs but also ensure that the pressure on University system will be relieved so that quality higher education can be achieved.

In the matter of recruitment to jobs or more precisely clusters of jobs that require a commonality of skills, the recruitment examination can be made open to all those who think they possess these skills, thus delinking degrees from jobs. At the same time the procedure to recruit will be made rigorous calling for a higher level of mastery of skills (as are seen in criterion-referenced examinations). There is therefore a need to look at clusters of jobs administrative, management, information dissemination, decision making, planning, banking and accounting and isolate skills and abilities needed and their mastery levels determined before making up such recruiting examinations. The technology that is available today in testing and examining is so advanced that such recruitment examinations can be prepared to any set of rigorous specifications and administered. What is therefore of importance is to create a political will and support individuals and organisations ready to accept such challenges in this matter. ☐

Sri Venkataraman Addresses Convocation of Roorkee University

Text of the convocation address delivered by Sri R Venkataraman, Vice-President of India, at the University of Roorkee on February 9, 1985.

"I am happy to address the Annual Convocation of the University of Roorkee, which is one of the outstanding centres of engineering education in the country and has produced a large number of distinguished engineers and technologists who have distinguished themselves in India and abroad. To my young friends who have received their degrees, diplomas and awards today, I offer my warmest felicitations and best wishes for a successful and satisfying career. I am sure that you will carry forward the torch of dedication and devotion to duty in whatever fields of activity you may be involved and bring more glory to your Alma mater.

We are barely a decade and a half from the year 2000 AD. You who are graduating today will spend most of your working life in the 21st century. You are standing on the threshold of new experience and the life before you would be full of untold opportunities as well as unexpected challenges. Your success or failure will depend entirely on your self-confidence, firm determination and hard work informed by honesty and sincerity. Shakespeare said : "In the disproof of chance lies the true proof of Man". I am sure you will be Man enough to fashion your path, pursue it diligently and achieve success for yourselves and glory to the nation.

The human race is at the cross road in its history. The rapidly increasing population with ever expanding consumption, the decreasing natural resources, the widespread pollution of the environment and the widening gap between the rich and poor peoples as well as nations and the insatiable hunger for more and more sophisticated weapons of destruction are threatening the very survival of Man. The issue before the world is whether we are going to harness science and technology for the welfare of human kind or the destruction thereof.

Dr. Janus Salk, the renowned scientist and Jawaharlal Nehru laureate said in his speech accepting the award : 'Recently science and medicine have been regarded by some as anti-human and the cause of many of our present day problems. However there is a difference in the scientific attitude and in the scientific ethic itself, which is neither pro nor anti-human, but merely expressive of truth seeking. It is the ethic of humans, which determines whether the work of scientists will be used benevolently or malevolently in terms of future generations".

The industrial revolution, which was brought about nearly three hundred years ago, as a result of major forward strides in the knowledge of science and technology, altered the course of human history. The vast natural resources of the world have since been exploited to improve the living standards of human beings. And yet, it is perhaps true that this revolution was not an unmixed blessing because it sowed the seeds for the division of the world between the industrially developed and the industrially backward societies. It produced vast economic disparities between man and man and the developing countries of the world are still struggling to overcome the legacy of inequality bequeathed by the industrial revolution and colonisation.

The human society today is witnessing another revolution—a technological revolution characterised by automation, satellite communication, computerisation, microprocessor applications, remote sensing techniques and genetic engineering. What promise does this technological revolution hold for the future of our race! It is true that modern technology is still a monopoly of a few rich countries. What prospects does it hold for countries that are newly industrialising or are still pre-industrial. Will this new revolution be used to reduce the gap between the rich and poor nations of the world or help the industrialised nations to make another leap forward. The basic question is whether this technological revolution will unite or further separate the human race—whether the progress in science and technology will be used for the greatest good of the largest number or to serve the selfish ends of a selected few.

The current military expenditure of the world is upward of seven hundred billion dollars a year—roughly two billion dollars per day. The daily expenditure on armaments would suffice to finance the five year development plans of many countries of the world. The United Nations expert group set up to study the relationship between development and disarmament has concluded that we can either opt for the arms race or for a more sustainable economic and political order, but we cannot do both. Improvement of the international security environment, so as to make possible substantial reduction in military spending, is therefore of urgent importance. The unity and stability of the modern world demands a new world order wherein, in the words of the great poet Rabindra Nath Tagore, "the world has not been broken into fragments by narrow domestic walls"—a world order based on freedom, justice, dignity and fair play, which recognises the common destiny of the entire human race.

Nearly thirty eight years have passed since India achieved independence from foreign domination. During this period our country has taken gigantic strides forward in almost every sphere of national endeavour. The successful completion of several multipurpose river valley projects, self-sufficiency in food production, establishment of a network of heavy industries—steel, machine tools, fertilizers, prime movers, petrochemicals and others—considerable augmentation in electric power generation, continuing discovery and tapping of our oil and gas resources, and the spectacular expansion of our electronics industy, are achievements of which we can justly be proud. Although these achievements have made a visible impact and the lot of the common man is certainly better today than it was before independence, our gains would have been much more striking and significant had we succeeded in containing the growth of our population. We have still a long way to go. Self-sufficiency in energy production, rural and urban housing, provision of safe drinking water and modernisation of our transportation facilities and eradication of poverty, malnutrition, disease and unemployment are some of the important tasks ahead.

A country like India needs to have a dual or two-pronged strategy to maximize the benefits of technological advancement. It is necessary—indeed imperative—for us to strengthen and update our science and technology potential so as to enable it to correspond with the latest improvements and developments in different spheres in the most sophisticated frontier areas of science and tehnology. It is no less importancto devote sufficient manpower, time and effort to provide appropiate ways and means by which known technology can be applied and used to the betterment of the lives of our teeming millions living particularly in rural areas. This raises the critical question of the nature and the level of technology for rural upliftment. There is no doubt that rural transformation requires technology inputs, the technology should however be in consonance with the local resource endowment and the need to increase employment opportunities, use of local resources and production of goods and services for local markets.

The destiny of our nation depends on the development of our villages. Mahatma Gandhi wrote in 1936, "if the village perishes, India will perish too". Universities can play a useful role in rural development by disseminating scientific and technological information through extension services and demonstration.

It must be recognised that numerous difficulties may be encountered in promoting rural development. In addition to social, economic and educational aspects, the engineering problems themselves may be quite complex and require several disciplines to come together to evolve workable solutions. The complexity of issues relating to rural development poses an intellectual challenge and it is for the universities to respond to this challenge in a positive and willing manner. That will be one way of enhancing the social relevance of higher education.

Another point I would like to dwell on briefly relates to interaction and collaboration between technical education system and institutions and the sectors and enterprises employing technical manpower. In the technologically advanced countries, academic institutions and production establishments work in a close partnership, accepting their individual responsibility in specified areas, treating technical education as a joint effort to ensure knowledge and skills in manpower necessary and appropriate to the technology levels in the economic sectors. Sandwich courses, industry sponsored research work, highly developed advisory and consultancy services at grass roots level are but the manifestation of this cooperation. Such interaction plays an important role in relating the education institutions to the real world around them. One of the primary functions of a university is to serve as a centre for generation and development of knowledge and understanding and providing signals of emerging problems and proposing a set of alternatives to resolve societal difficulties. The generation of new ideas is facilitated if it is evolved against the background of the complex forces at play in the real world. The success of university-industry interaction depends to a large measure on a genuine commitment on both sides as well as the ability of individual members and institution to play a complementary role in areas of industrial development. In India, although it is gratifying to note that there has been a growing awareness of the importance and usefulness of university-industry interaction and many initiatives have been taken by both sides to foster such interaction, still greater effort is required to make the co-operation more dynamic and relevant to the national goal of self-reliance. Absence of competition both from within and outside the country has dimmed cost consciousness and the urge for the economy and efficiency in Industry. The sooner the situation is rectified the better it is for accelerated economic development.

Graduates of the Year !

You are the architects, planners and builders of the next century. You have been initiated to enter the profession of your choice and you will have to be responsive to technological changes and cannot rest on your oars. To repeat the message of Lord Buddha, "Be a lamp unto yourselves and work out your salvation with diligence".

The lamp that has been lit for you at this University will light your way and you will now have to work with diligence.

The great Tamil Saint Tiruvalluvar said 2000 years ago :

Where rare opportunity comes to us

That is the time, hardest work to do.

I wish you all success"

Advanced Course on New Trends in Social Sciences

A six-day advanced level course on "New trends in Social Sciences in the context of the emergence of a non-violent Society" was organised by Gujarat Vidyapith's Jamnalal Bajaj Institute of Studies in Ahimsa. 65 experienced teachers of social sciences from 34 universities, 18 colleges and 17 research institutes participated in this course which was perhaps the first of its kind. Prof. Johan Galtung, Rector of Universite Nouvelle Transnationale, Paris and world-renowned social scientist, conducted the course. He gave six lectures, one each on:

(1) Macro Social Science: the comparison of civilisations; (2) New trends in social science methodology; (3) Epistemology and intellectual style as a function of culture and structure; (4) Micro History: Some long term trends in western civilizations; (5) Alternative doctrines of security; and (6) On the theory and practice of self-reliance

Prof. Johan Galtung spoke every day for two hours. This was followed by two to three hours of intensive discussion. Several charts and matrix were prepared by Prof. Johan Galtung who is a founder of International Peace Research Association and a pioneer of trans-disciplinary studies and research.

A workshop on how to reflect new trends in Social Science in the conventional subjects was held on the last day. The various suggestions made by participants included : greater use of holistic approach in teaching of various social sciences, application of participation methods in social research, unfolding Macro & Micro dimensions in every subject, organisation of more seminars on trans-disciplinary and futuristic character of Social Sciences, adoption of Cosmological approach, facilities for a retraining of Social Science teachers, studies in peace, Ahimsa and Gandhian thought be made integral in every curricula, organisation of several non-formal courses on these subjects, documentation and bibliographies on this subject, etc.

The course was inaugurated by Mr. P. S. Poti, Hon'ble Chief Justice of Gujarat High Court, who pleaded for greater support to Social Science Research in order to prevent isolation of various disciplines of studies including Law. The Chief Justice stated that he had ordered for a special acquisition of Social Science Books in the High Court Library so that lawyers have full background of the inherent social forces that govern the relations and distortions between human beings.

Prof. Ramlal Parikh, Vice-Chancellor, presided over the function and stated that there is no scope for variance between the ideas and the practices that Gandhiji himself evolved as the founder and life-long Chancellor of this institution. The Gujarat Vidyapith cherishes and adheres to his legacy as a sacred trust and duty, despite the heavy onslaught of mercenarism all round. Mahatma Gandhi lived and died for the ideals of non-violence. As times move, it is becoming increasingly clear that the emerging 21st century is now poised to take a leap towards the realisation of these ideals. It is also becoming clearer that Gandhiji is not just a person but a phenomenon of universal application in daily life. The Vidyapith community was doing its humble best to sustain not only this rich legacy of ideas and thought but the way of life that is integral to it and which was meticulously and scientifically evolved through indigenous experiments applying truth and non-violence in personal as well as social life.

Continuing, he said the word "Ahimsa" is not just a personal virtue nor a negative act. It is a positive, creative and societal phenomenon. The Ahimsak Samaj or non-violent society implies a *non-exploitative* system based on equal dignity of all human beings. This is not a limited question of just non-killing or abstention from physical violence. It is a new system emerging from age-long continuum of Barbarism to civilisation and therefore from violence to non-violence and from exploitation to total elimination of exploitation in any form—explicit or implicit. This is the enormous dimension of the programmes of "Ahimsa Shodh Sansthan" founded in memory of Shri Jamnalal Bajaj.

He observed, this Institute was a culmination of three academic programmes which have been operating for several years. These were the Centre for Gandhian Studies, the Peace Research Centre and the Centre for Interaction between Science and Ahimsa. Integration of these three programmes in a co-related manner would be advantageous in conducting inter-disciplinary research at a high level.

The participants visited Sabarmati Ashram and listened to light and sound programme on Gandhiji's life. An exhibition of books on non-violence was organised by the library. A bibliography of books on non-violence was also published by the Library on this occasion.

Almost all participants pleaded for a continuation of this course every year.

JNU to offer two courses on Gandhian Studies

The Jawaharlal Nehru University has decided to offer two courses in Gandhian Studies from the next academic session. Of these, one course entitled 'Gandhi and the World' shall be at M.Phil level while the other entitled 'Gandhi and Sarvodaya' shall be at M.A. level. The Gandhian Studies Programme shall be implemented as a School-level programme at the School of International Studies.

Prof. S.C. Gangal of the Centre for International Politics and Organisation has been appointed as the Director of the Programme.

The Programme also envisages a long-term inter-disciplinary research project entitled 'The World and the Gandhian Alternative'. Besides, plans are also being formulated for regular discussions, seminars and symposia under the programme.

To help organise these courses/Project, the University Grants Commission has sanctioned a Visiting Professorship, a Research Associateship and a Junior Research Fellowship besides a grant of Rs. 30,000/- for books and journals.

An eight member Advisory Committee has been set up with Prof. Gangal as its ex-officio Chairman. It consists of four academics from JNU, Prof. Bimal Prasad, Prof. K.P. Misra and Prof. P.A.N. Murthy besides Prof. Gangal and one academician each from Panjab University, Delhi University and Gandhi Peace Foundation and a Sarvodaya leader.

News from Agril. Varsities

KKV Research Council Meets

A meeting of the Research Council of the Konkan Krishi Vidyapeeth, Dapoli, was held to review the progress of research work carried out by various departments of the university during the rabi/hot weather season in the year 1983-84. Similarly, the research projects proposed to be carried out during the rabi/hot weather season of 1984-85 were thoroughly discussed and finalised.

In his inaugural address, Dr. Prataprao Salvi, Vice-Chancellor of the Konkan Krishi Vidyapeeth, Dapoli, desired that the day-to-day problems of the farming community should be reflected in the research work undertaken by the university. For this, problem oriented research projects need to be formulated. While speaking about modern agricultural technology proposed to be developed by the university, he advised that the technology should be simple and economically beneficial to a larger number of marginal farmers. To achieve this, it is necessary to know the problems faced by the farmers in their day-to-day farming activities. It is also necessary to know the needs of the farmers which could be ascertained only when the scientists establish personal contacts with the farmers and by visiting the farmers' fields.

The Vice-Chancellor then stressed the importance of farmers' rallies and pointed out that the farmers rallies would be very useful platforms for knowing the needs and constraints of the farmers. The rallies would help the scientists in procuring basic information for undertaking need based research. He expressed his desire that such rallies should be organised regularly and frequently.

Lab to Land activity at PKV

The Department of Anatomy, Physiology and Nutrition arranged a field visit of University Officers including Vice-Chancellor Dr. K.R. Thakre, in a lab to land field activity concerning artificial insemination of goats at Amboda and Akolkhed, Villages located near Akoat, in Akola district recently. The officers were welcomed by Shri Pimprale, the Headmaster of the School at Akolkhed and thanked the Punjabrao Krishi Vidyapeeth for the project on goats which produced crossbred progeny from Ajmeri improved bucks. The lab to land inputs of certain medicines and nutrients were distributed by the Vice-Chancellor to the beneficiaries, who had assembled there alongwith the crossbreed progeny produced by the does. These crossbreeds are supposed to give increased production of meat and milk as compared to their originals, thus contributing to better nutrition and economics of the rural poor.

Last year, at Amboda, a total of 150 does were successfully inseminated with diluted and frozen semen and kidding percentages of 70% and 36% were achieved respectively. This year, a record of 250 does (she goats) have been inseminated and the kidding is in progress.

Auto factory smoke causing health hazard

How much damage an automobile battery reprocessing factory can cause to cattle health is evident from a report received in the Punjab Agricultural University. The report says that five buffaloes of a farmer in Village Nasrali near Gobindgarh in Patiala district had died. Apart from these deaths, some animals have become blind while some others have fallen sick with pre-dominant nervous system with intermittent attacks during which the animals strike their heads against the walls. In some animals the nervous system recurs with short intervals.

Dr. M.S. Kwatra, Senior Scientist in the Disease Research Centre and Dr. M.S. Kang, Extension Specialist (Plant Pathology) of the PAU who toured this village found that only those animals were affected which were fed on the berseem crop in the area adjacent to the auto factory where the scrap automobile batteries were reprocessed.

The experts, on the basis of laboratory tests, have concluded that the particulate fumes coming out of the chimney of the factory processing automobile batteries, contaminate the fodder crop and were thus responsible for this particular animal disease which closely resembles that of lead poisoning. Besides cattle, horses and sheep, human health is also jeopardised by the fumes spreading in the surroundings of such factories.

The PAU experts are strongly of the opinion that such factories recycling the automobile batteries, should not be allowed to be located near the agricultural fields as the fumes can be a serious health hazard to livestock as well as human beings.

Foundation stone of Integrated Energy Complex laid in Ludhiana

Shri R.V. Subrahmanian, Senior Adviser to the Punjab Governor laid the foundation stone of an Integrated Energy Complex at Village Hambran in Ludhiana district recently. This complex will have Asia's biggest Community Biogas Plant which will cost Rs. 34 lakhs. Rs. 24 lakhs will be provided by the Science & Technology Ministry of the Government of India while Rs. 10 lakhs would be financed by the Indian Council of Agricultural Research. The Village Panchayat has given 2.6 acres of land for this project.

Speaking on this occasion Shri Subrahmanian said that it was a unique experiment to meet the energy requirements of the rural people. He appreciated the engineers of the Punjab Agricultural University for providing technical guidance for this project and hoped that it would be an example for the villages all over the Punjab to follow. He was all praise for small dairy and poultry units started by the marginal and landless farmers of this village under the guidance of the PAU.

Dr. S.K. Vyas, Incharge of the project told Shri Subrahmanian the details of the project and said that Hambran was selected because it had enough cattle dung available from about 2,000 animals to produce required quantity of bio-gas for 272 families of the village.

The project has two stages. In the first stage four digesters (two of 85 Cu.M. capacity and two of 140 Cu.M. capacity) would be installed to produce 450 Cu.M. bio-gas and about 7 lakh kg of dung manure. In the second stage four digesters each of 140 Cu.M. capacity would be pressed into action to produce 560 Cu.M. bio-gas and 8.5 lakhs kg of dung manure annually. The bio-gas will also drive two gasifiers and two 25 KW electric generators. Forty community latrines will be constructed and 10 acres of land would be put under agro-forestry.

Dr N.S. Randhawa appointed ICAR chief

Dr N.S. Randhawa, a Soil Scientist and Deputy Director-General (SAE) in the Indian Council of Agricultural Research (ICAR), has been appointed Director-General of the ICAR and Secretary to the Department of Agricultural Research and Education in the Union Ministry of Agriculture and Rural Development.

Dr Randhawa has served the Punjab Department of Agriculture and the Punjab Agricultural University in various capacities. At the PAU, he served as Professor and Head of the Department of Soils, Dean of the College of Agriculture and Director of Research with additional charge of the Dean of Home Science College. In 1979 he left PAU to join ICAR as Deputy Director-General (SAE).

Dr. Randhawa has made significant contributions in Soils Research particularly the micronutrients. He is among the pioneers who diagnosed zinc deficiency in citrus in Punjab and later in wheat and other crops in India. His research achievements were recognised through the award of Rafi Ahmed Kidwai Memorial prize in Soil Science for the biennium 1973-75 and was also awarded Fertilizer Association of India Award. He is widely travelled and represented India in different countries on FAO and other assignments. Besides guiding the research work of a large number of postgraduate students, he has published more than 250 research and technical papers in national and international journals of repute.

News from Abroad

Breakthrough in Barramundi Breeding in Australia

Fisheries scientists in Australia have achieved a breakthrough in the artificial breeding and production of fish. Barramundi had been successfully reared on a large scale in north Queensland. Research effort directed at Barramundi is aimed at developing the state's marine and freshwater fisheries resources. This exotic species, though closely related to the native Barramundi, breeds in fresh water.

The research team had successfully raised more than 20,000 larval Barramundi which were now being maintained at the fisheries research centre in Cairns.

The successful production of Barramundi had been greatly helped by applying techniques which Mr. McKinnon had seen during a visit to Thailand.

The barramundi larvae which are now feeding successfully, is expected to grow to a size of 15 millimetres in 15 to 20 days from fertilisation. The fingerlings will then be transferred to fresh water at the Walkamin fish hatchery where further studies on their growth and survival will be made, it is said.

The researchers at Cairns would continue with this work and further batches of fingerlings would be raised in the next few months.

Barramundi was one of Australia's better-known fish and was very highly regarded as a sporting fish and for its excellent eating qualities.

[Courtesy: Australian Information Service, Agricultural Newsletter]

Dr. T.N.M. Waters new Chairman of the New Zealand VCs' Committee

Dr. T.N.M. Waters, Vice-Chancellor of Massey University has been appointed Chairman of the New Zealand Vice-Chancellors' Committee for a two-year term commencing in January 1985. Dr. Waters succeeds Professor A.D. Brownlie, Vice-Chancellor of the University of Canterbury.

The Vice-Chancellors' Committee consists of the Vice-Chancellors of the six New Zealand Universities and the Principal of Lincoln College. The Committee provides machinery through which universities are able to discuss policies and issues of mutual interest. In addition it publishes information on university affairs, coordinates a number of overseas visitor schemes and makes appointments to a wide variety of boards and committees which seek university representation at the national level. Through its sub-committees it has maintained particular interest in Libraries, Computing, Graduate Employment, Staffing and Salary issues and Tertiary Assistance Grants.

Australian mining equipment mission to visit India

An Australian Mining Equipment and Services Mission, comprising 11 senior executives from leading Australian mining equipment manufacturers will visit India during February, 1985.

The eleven-member mission will visit Delhi, Udaipur, Bombay, Nagpur, Calcutta and Ranchi.

The mission will explore ways to increase collaboration between India and Australia in the mining and oil sectors.

Australia is one of the world's principal producers and exporters of minerals and metals and, as its mines are located in areas with climatic and environmental conditions similar to those in India, is well placed to offer mining technology to India.

The Australian delegation is particularly keen to discuss technical collaboration with Indian partners.

Patrice Lumumba Friendship University completes 25 years

The Patrice Lumumba Peoples' Friendship University of Moscow has trained during 25 years of its work about 13,000 engineers, physicians, agronomists and veterinary surgeons for 107 countries. This has been stated by Vladimir Stanis, Rector of that higher educational establishment in an interview to TASS in connection with the 25th anniversary of the University.

It also trains scientific and pedagogical cadres for higher educational establishments of these countries, V. Stanis said. Today, graduates of the University work as teachers at 19 universities of Asian and African countries and practically at all the leading universities of Latin America.

"The chief characteristic feature of our University consists in the fact that our students not only get university education but also receive special knowledge necessary to them for the work in their respective countries," the Rector underlined.

"The scientific and production base of the University will be further expanded, V. Stanis said. Our computer centre will be given a new computer. The building of a new block of the agricultural department, two new hostels and another polyclinic will be started this year. It is planned to build a new sports complex, a swimming pool and blocks for other departments," he said.

[Courtesy : Youth Review, January 23, 1985.]

News from UGC

INSAT-1B Programme of UGC

Between 18th and 28th February, 1985, the following schedule of telecasts on higher education through INSAT-1B under the auspices of the University Grants Commission will be observed. The programme is of one hour duration every day from 12.45 p.m. to 1.45 p.m. and will be available on the TV network throughout the country.

18.2.85

"Origins of Change-I"
"Inamgaon"
"Power from the Earth"
"Orchids of Sikkim"

19.2.85

"Introduction to Electrons"
"Induced Breeding"
"Sulpher and its Compounds"

20.2.85

"Origins of Change-II"
"When the Artifacts"
"The factory Doctor"

21.2.85

"Ion Implantation"
"To Communicate Is the Beginning"

22.2.85

"Seeing Is Believing"
"Geothermal Energy"
"Born-2600 years Ago"

23.2.85

"Understanding Systems"
"Reconquering the Town"
"Art of Animation"

24.2.85 (Sunday)

No Telecast

25.2.85

"Hurricane Below"
"Transformers"
"The Action"
"Queen of Spices: Cardamom"

26.2.85

"The Gift of Life"
"Nuclear Energy"

27.2.85

"Robert Frost"
"Anoxic Biodegradation"
"Shrimp Farming"

28.2.85

"Radiation Processing of Surfaces"
"The Farthest Frontier"
"Warning Signal"

MADAN MOHAN MALAVIYA ENGG. COLLEGE

GORAKHPUR (U.P.)

Advertisement No. VIII/84-85

Applications for the undermentioned posts are invited on prescribed application forms obtainable from this office on request accompanied with self addressed envelope of 23 x 10 cms size affixed with postage worth Re. 1.00 upto **26th February 1985**.

ENGINEERING SUBJECTS

I. Professors

(a) Civil Engg. Deptt. (under Hill Area Engg.)	1 Post (Temp. but likely to be made Permanent).
(b) Computer Science	1 Post -do-

II. Asstt. Professors

(a) Electronics Engg. Deptt.	1 Post (Permanent)
(b) Civil Engg. Deptt.	1 Post (Permanent—appointment will be made on Temp. Basis.)
(c) Civil Engg. Deptt. (under Hill Area Engg.)	1 Post (Temp. but likely to be made permanent).
(d) Computer Science	2 Posts -do-

III. Lecturers

(a) Mech. Engg. Deptt.	1 Post (Permanent)
(b) Civil Engg. Deptt.	1 Post (Permanent)
(c) Elect. Engg. Deptt.	1 Post (Permanent)
(d) Computer Science	2 Posts (Temp. but likely to be made Permanent)

NON-ENGINEERING SUBJECTS

(a) Professor (Maths)	1 Post (Permanent)
(b) Asstt. Prof. (Maths)	1 Post (Leave vacancy upto 3/86)
(c) Lecturer (Humanities)	1 Post (Permanent—appointment will be made on Temp. Basis.)

Scale of Pay applicable

Professor	1500-60-1800-100-2000-125/2-2500
Asstt. Professor	1200-50-1300-60-1900
Lecturer	700-40-1100-50-1600

ADMINISTRATION

Registrar	1 Post (Permanent)
Scale of Pay	1250-50-1300-60-1660-EB-60-1900-75-2050

Number & nature of vacancies may be changed, increased or decreased.

Candidates having first class B.E./B.Tech/B.Sc. (Engg.) Degree may also apply for the post of Lecturer against Engg. Section.

Details of qualifications and required experience etc. will be supplied alongwith the application forms.

Candidates who have already applied against the post of Prof. & Asstt. Prof. in Civil Engg. against Advt. No. IV/83-84 & Advt. No. II/84-85 need not apply again but they should send their consent.

For the post of Asstt. Prof. in Hill Area Engg., Geologists can also apply.

Last date for receipt of the application forms duly completed is **28-3-1985.**

ADMINISTRATIVE OFFICER

BIRLA INSTITUTE OF TECHNOLOGY

Mesra : Ranchi

ADMISSIONS—1985—M.B.A. (2 & 3 Yr.)/M.C.A. (3-Yr.)

Post-graduate Degree Course

Applications are invited for admission to the following Post-graduate Degree programmes for academic session commencing August 1985:

(i) Master of Business Administration (2-Yr. & 3 Yr.)

(ii) Master of Computer Applications (3-Yr.)

Admissions will be made through an Entrance Exam. which will be held on Sunday. May 26, 1985 at 1.00 p.m. at the following centres:

Allahabad, Agra, Bhagalpur, Bhubaneswar, Bangalore, Bombay, Calcutta, Chandigarh. Delhi, Gauhati, Hyderabad, Jamshedpur, Jaipur, Lucknow, Madras, Muzaffarpur, Nagpur, Patna, Ranchi and Sindri.

Eligibility

(i) *For M.B.A. Course :* University Degree with atleast 55% aggregate marks in Arts/Science/Commerce and 60% marks for graduates in Engineering/Technology.

(ii) *For M.B.A. Course :* PART-TIME PROGRAMMES are also being conducted. For PART-TIME COURSE a candidate must have TWO YEARS' EXPERIENCE IN SUPERVISORY CAPACITY in any firm or organisation of repute.

(iii) *For M.C.A. Course:* University Degree with at least 50% aggregate marks and with Maths. or Statistics as one of the subjects at the Under-graduate level.

Seats are reserved for SC/ST CANDIDATES for whom aggregate marks are relaxable by 5%.

Those appearing at the various qualifying examinations are eligible. The selected candidates will, however, be required to produce the qualifying exams. result by the end of August, 1985.

Application forms can be obtained by post on pre-payment of Rs. 10/- only by Crossed Postal Order, payable to the Registrar, Birla Institute of Technology, Mesra, Ranchi, and a self-addressed envelope bearing stamps worth Rs. 1.10 p. of size 24 cm x 11 cm.

The last date for receipt of completed application form is **15th April, 1985.**

J.B. Saksena
REGISTRAR & OSD

AIU Library & Documentation Services

One of the important functions of the Association of Indian Universities is to act as a clearing house of information on higher education in the country. Towards this end the AIU Library is engaged in collection building and developing instruments for the dissemination of research information. Over the years a valuable collection of books and documents on different aspects of higher education has been acquired.

The Library has also developed Bibliography of Doctoral Dissertations as an effective tool in the dissemination of research information. Retrospective bibliographies covering the period 1857-1970 and 1970-75 were the first to appear. Effective 1975, however, the bibliography is issued annually in two volumes. One volume deals with Natural and Applied Sciences while the other records doctoral degrees awarded in Social Sciences and the Humanities. In addition to the normal bibliographical details like the name of the Research Scholar, the title of the thesis, years of registration for and award of the degree, and the name of the University accepting the thesis for award of a doctoral degree, the bibliography also gives name and complete address of the supervising teacher and an availability note that seeks to inform whether a copy of the dissertation is available for consultation and use in the University Library/Department or Registrar's Office.

The columns 'Theses of the Month' and 'Research in Progress' are intended to cut out the time lag between the receipt of information and its inclusion in bibliography. Such Universities as are not sending us regular information in respect of Doctoral Theses accepted and research scholars enrolled are welcome to make use of these columns.

The Library is situated at 17-B, Indraprastha Marg, New Delhi-110002. It is open from 10 a.m. to 5 p.m. Monday through Saturday except Second Saturday.

RESEARCH IN PROGRESS

A list of Research Scholars Registered for Doctoral Degrees of Indian Universities

PHYSICAL SCIENCES

Physics

1. Goswami, Manasi. *Some problems in reactor physics.* U Delhi. Dr. L.S. Kothari and Dr. Feroz Ahmed.

2. Jayakumar, V.S. *Vibrational spectra of crystals and molecules.* U Ker, Trivandrum. Dr. G. Aruldhas.

3. Joshi, Vinayak Krishnarao. *A study of superluminal optical phenomena.* Shivaji U, Kolhapur. Dr. M.T. Teli.

4. Kothari, Deepika. *Electrical and structural studies of transition metal oxide glasses.* U Delhi. Dr. Feroz Ahmed.

5. Koul, Avtar Krishan. *Atmospheric physics.* U Delhi. Prof. C.S.G.K. Satty and Dr. O.P. Nagpal.

6. Krishnamoorthy, S. *Studies on the middle atmospheric dynamics.* U Ker, Trivandrum. Dr. S. Devanarayanan and Dr. P. Balarama Rao.

7. Natha Raj, P.S. William. *Vibrational spectra of crystals and molecules.* U Ker, Trivandrum. Dr. V. Unnikrishnan Nayar.

8. Prasad, Vinod. *Physical aspects of extra corporeal circulation of blood.* U Delhi. Prof. D.P. Goyal and Dr. Vidya Bhushan.

9. Sanjeev Kumar. *Physical aspects of blood flow in cardiovascular system.* U Delhi. Prof. D.P. Goyal and Dr. Vidya Bhushan.

10. Susy, K. *Waves in the atmosphere.* U Ker, Trivandrum. Dr. S.R. Prabhakaran Nair.

Chemistry

1. Ambade, Nirmala Shripati. *Synthetic study of natural products using polyphosphoric acid and synthetic applications of 2,3 dichloro-5, 6 dicyano-p-benzoquinone.* Shivaji U, Kolhapur. Dr. R.B. Mane.

2. Chauhan, Rukmani. *Some biochemical aspects of cataract formation.* MDU, Rohtak. Dr. A.S. Saini and Dr. I.P. S. Parmar.

3. Patil, Tukaram Narasing. *Kinetics and mechanism of silver catalysed oxidation of hydroxyacid amides by potassium persulphate.* Shivaji U, Kolhapur. Dr. S.G. Sankpal.

4. Salunkhe, Deepak Govindrao. *Polymer supported reactions.* Shivaji U, Kolhapur. Dr. M.M. Salunkhe.

Earth Sciences

1. Panicker, P.S. Jayachandra. *Geochemistry of laterite ground water interphase.* U Ker, Trivandrum. Dr. P.T. Roy Chacko.

BIOLOGICAL SCIENCES

Biology

1. Kar, Ghanendra Kumar. *Limnological studies on Hirakud Dam reservoir and river IB with reference to paper mill waste pollution.* Sambalpur U. Dr. M.C. Dash.

Biochemistry

1. Mathai, Annie. *Studies on the development of microfilariae to infective larvae in Culex fatigans.* U Ker, Trivandrum. Dr. R. Kaleysa Raj and Dr. K. Saraswathy Devi.

2. Samuel, Mary. *Studies on glycolipids and glycoprotein metabolism in Culex fatigans.* U Ker, Trivandrum. Dr. K. Saraswathy Devi and Dr. R. Kaleysa Raj.

Botany

1. Deshmukh, Vasundhara Arvind. *Stability and expression of heterosis of some characters of safflower, Carthamus tinctorius L. under different environments.* Shivaji U, Kolhapur. Dr. A.D. Karve.

2. Ghanekar, Achyut Raghunath. *Heterosis and stability of some morphological, juice and yield contribution characters of sweat sorghum.* Shivaji U, Kolhapur. Dr. A.D. Karve.

3. Zende, Narendra Jagdish. *Association between seed yield and some morphological characters of safflower, Carthamus tinctorius L. under different environments.* Shivaji U, Kolhapur. Dr. A.D. Karve.

Zoology

1. Deo, Hrudaya Mohan. *Seasonal variation in haematological responses of a tropical anuran. Bufo melanostictus Bloch and Schneider.* Sambalpur U. Sri A. Mittra.

2. Gonjari, Ghanshyam Ramchandra. *Studies on the salivary glands of some molluscs.* Shivaji U, Kolhapur. Dr. S.C. Nanaware.

3. Mary, Eugene. *Animal behaviour.* U Ker, Trivandrum. Dr. M. Balakrishnan.

4. Patra, Sujata. *Fish culture of certain major carp in some ponds with reference to hypophysation at Sambalpur in Orissa.* Sambalpur U. Dr. A.K. Patra.

5. Tippanna, Satyappa Lagali. *Limnology of Rankala Tank, Kolhapur-an ecological approach.* Shivaji U, Kolhapur. Dr. J.A. Sawant.

Medical Sciences

1. Roy, Banani. *Evaluation of mutagenic potentials of some antileprotic and antifilarial drugs.* Sambalpur U. Dr. R.K. Dash.

2. Vasisht, Karan. *Quassinoids and alkaloids of certain Ailanthus species of Indian origin.* Pb U, Chandigarh. Prof. S.S. Handa

Agriculture

1. Satapathy, Gitarani. *Effect of some pesticides on microbial population, biomass and metabolism in a tropical grassland soil.* Sambalpur U. Dr. Niranjan Behera.

THESES OF THE MONTH

A list of Doctoral Theses Accepted by Indian Universities

PHYSICAL SCIENCES

Mathematics

1. Aggarwal, Veena. *Geometric programming and transcendental programming problems in nonlinear optimization.* U Roorkee.

2. Bhansalkar, Alka. *Some contributions to the theory of convergence structures.* Nagpur U.

3. Datta, Tapankumar. *On some properties of pseudo-ideals and p-rings.* U Calcutta.

4. Dixit, Ashok Kumar. *A study of hypergeometric functions of several variables.* U Raj, Jaipur.

5. Goyal, Vibha. *Fundamental models with various types of repair facilities in the theory of reliability.* U Roorkee.

6. Guha, Bandana. *A study of transform analysis and special functions with applications.* RSU, Raipur.

7. Gupta, Arun Kumar. *Thermal effect on some vibration problems of orthotropic plates of variable thickness.* U Roorkee.

8. Gupta, Bina. *Theoretical studies in multi-objective programming.* U Delhi.

9. Indra Jeet Singh. *Some problems in topology.* H.S. Gour, Sagar.

10. Naresh Kumar. *A study of growth properties of entire functions of index pair (p, q) and analytic functions in a half plane.* U Roorkee.

11. Sachan, Mahabir Prasad. *Summability of trigono matrical series.* APSU, Rewa.

12. Sai Prasad, B. *Some problems on fixed point theorem.* SKU, Anantapur.

13. Singh, Ravindra Kumar. *Propagation of shock waves in magneto-radiative gas dynamics and relativistic gas.* Avadh U.

14. Sunita Rani. *An empirical and Monte Carlo study of certain efficient estimation problems using prior and auxillary information.* U Roorkee.

15. Tewari, Vidhya Sagar. *Thermal effect on some vibration problems of elastic plates of variable thickness.* U Roorkee.

16. Wilfred, Vasantha. *Stability of flow past porous media.* Bangalore U.

Statistics

1. Dulawat, M.S. *Point and interval estimation based on conditional specification.* U Raj, Jaipur.

Physics

1. Ambrose, S. *Studies on periodic crystallisation of magnesium hydroxide in agar agar gel.* Anna U, Guindy.

2. Balvantha Rao, G. *On certain aspects of carrier degeneracy in semiconductors and some related quantum mechanical effects.* U Calcutta.

3. Basudev Prasad. *Study of polycrystalline silicon solar cells.* U Roorkee.

4. Bhole, N.L. *Studies on dislocation density and microhardness in electrolytically coloured KCl crystals, pure and doped with alkaline etarth impurities.* Nagpur U.

5. Chauhan, Mahendra Pratap Singh. *Nonequilibrium effects in Josephson junctions.* U Delhi.

6. Datta, Dhirendranath. *Some studies on the static and microwave properties of DAR (Double Avalanche Region) IMPATT diode.* U Calcutta.

7. Ghosh, Srabani. *Biophysical studies on a model membrane system.* U Calcutta.

8. Hussain, Saiyed Asgar. *Polarization studies in magnetically polarized polypropylene.* Bhopal U.

9. Islam, Mohammad Shafigul I. *Study of the L III absorption spectra of rhenium and dysprosium in some of their systems.* Nagpur U.

10. Kanaka Durga Rani, Chalasani. *An alternate approach to neutron-proton-boson model in the rotational limit.* Andhra U, Waltair.

11. Khan, S.M. *Nonlinear wave instabilities in nondegenerate moderately piezoelectric semiconductor plasmas.* Vikram U, Ujjain.

12. Malik, Anita. *Electrical transport properties of heavily doped and compensated N-and P-type GaSb and N-type InSb.* U Delhi.

13. Mann, Dalal Singh. *Electromagnetic radiation from line sources interacting with stationary and moving plasma configurations.* U Delhi.

14. Narayana Rao, D. *Radioclimatology and microwave propagation characteristics over southern India.* SVU, Tirupati.

15. Saha, Syamal Kumar. *Aspects of electromagnetic fields in general relativity.* U Calcutta.

16. Sen, Keshab. *Theoretical study of MIS and STS solar cells.* Garhwal U, Srinagar.

17. Sharma, Desh Raj. *Study of performance characteristics of vapour pumps.* IIT, Delhi.

18. Tiwari, Radhey Shyam. *Ion acoustic soliton and modulational instability.* U Raj, Jaipur.

19. Upadhyay, Jugal Kishore. *Electrical and optical characteristics of polymer foils and rigid glasses with special reference to the electret state.* H.S. Gour, Sagar.

20. Venkatasubramaniam, Krishna. *The crystal and molecular structure of biologically important compounds.* U Calcutta.

21. Vijayakumar, K.P. *Surface studies of some metallic thin films by optical methods.* U Cochin.

Chemistry

1. Agarwal, Purshottam Lal. *Purification of glycyl tRNA synthetase: Physical, chemical, immunochemical and enzymatic properties and kinetics of inhibition using* 1-*amino*-3 *chloroketone* U Raj, Jaipur.

2. Agarwal, Rashmi. *Studies with some pyridinol azo dyes and their interactions with chlorite mineral.* U Roorkee.

3. Aravindakshan, C.P. *Contributions to the chemistry of* 1, 2, 4—*triazoles.* U Ker, Trivandrum.

4. Arora, Rakesh Kumar. *Studies on the synthesis of some heterocyclic systems of medicinal importance.* U Roorkee.

5. Arya, Prabhat. *Synthetic studies in some bioactive plant polyphenolics.* U Delhi.

6. Bahar Ahmad. *Chemical investigations of some plants of medicinal importance.* U Roorkee.

7. Bhide, Madhuri Bhaskar. *Nucleophilic substitution: Kinetics of nucleophilic substitution reaction of p-substituted phenacyl bromides.* SPU, Vallabh Vidyanagar.

8. Calla, Sudha. *Studies on metal complexes of nitrogen containing chelating ligands.* U Raj, Jaipur.

9. Chandra Has. *Heat transfer from horizontal surface to the pool of aqueous solutions.* U Roorkee.

10. Chaturvedi, Satish Kumar. *Chemical study of some indigenous medicinal plants.* H.S. Gour, Sagar.

11. Chhotray, Nayantara. *Studies on the crystallization of calcium oxalates in some urinary calculi and in model systems.* U Delhi.

12. Chowdoji Rao, K. *Thermodynamic study in liquid mixtures : A study of physicochemical properties of metal formites in binary liquid mixtures of formic acid.* SKU, Tirupati.

13. Datt, Brahm. *Radical chain polymerization.* U Jammu.

14. Dave, M.P. *Studies on drug potentials.* Bhavnagar U.

15. Dhar, Jagdish Kumar. *Studies on the recovery of various salts from brine and deposits of Tsokar lake.* U Jammu.

16. Dhiman, Rishi Pal. *Chemical studies on medicinal plants from convolvulaceae. euphorbiaceae and brassicaceae families.* U Roorkee.

17. Fakhir, Thawra M. *Study of senecio and related alkaloids.* U Delhi.

18. Gupta, Mridula. *Polarographic studies on some arylazo derivatives of* β-*diketones and substituted azines.* U Roorkee.

19. Hura, G.S. *On petrinet approach to modelling, analysis and some design aspect of software system.* U Roorkee.

20. Jindal, A.K. *Colloidal and surface properties of lignin from eucalyptus wood.* U Roorkee.

21. Katkar, Nijaya S. *Potentiometric studies in some ternary complexes of* UO_2 *(VI).* Nagpur U.

22. Kewal Krishan. *Studies on transition metal complexes of substituted benzothiazoles, 4-thiazolidinones and their derivatives.* Garhwal U, Srinagar.

23. Khajuria, Hem Raj. *Physicochemical studies of Jammu and Kashmir clays.* U Jammu.

24. Maheshwari, Vinod Kumar. *Clay mineralogical studies of forest soils with particular reference to Mossbauer spectroscopy* . Garhwal U, Srinagar.

25. Mallampalli, Durgaprasad. *Application of some field theoretical techniques in quantum chemistry.* U Calcutta.

26. Mohan Prasad. *Synthesis of potential biodynamic agents.* Avadh U.

27. Mujju, Kalpana. *Regulation of alpha-fetoprotein turnover during development.* Avadh U.

28. Mundloi, S.M. *Spectral and polarographic studies of mixed ligand complexes of copper (II) with amino acids.* Vikram U, Ujjain.

29. Narvi, Shahid Suhail. *Characterisation of some mixed ligand complexes of amides and amino acids.* U Roorkee.

30. Nayak, Bansidhar. *Thermal behaviour of quartzite in the manufacture of silica bricks with special reference to that of Urban-Rampur Quarry, Raigarh (M.P.) and Bonai deposit (Orissa).* Sambalpur U.

31. Pal, Sanrabh. *Studies on some aspects of coupled cluster method in quantum chemistry.* U Calcutta.

32. Pandey, Shanti. *Some physicochemical studies on cationic substitution in the bone mineral.* Sambalpur U.

33. Pandita, Sangeeta. *Applications of lanthanum (III) chloride in organic synthesis.* U Delhi.

34. Rastogi, Ranjana, *Studies on the reactions of antimony (III)-isopropoxide and chloride with N,S or O containing ligands.* U Delhi.

35. Rawat, Thakur Singh. *Studies in molecular structures. vibrations and the nature of chemical bonds.* Garhwal U, Srinagar.

36. Sambasiva Rao, Gadde. *Studies on triterpenoids of* **Euphorbia trigona Haw** *and* **E. nerifolia** *Linn.* Andhra U, Waltair.

37. Sarkar, Kakali. *Potentiometric investigations on the complexation behaviour of thiosemicarbazone and amido-hydrazone of N-methylation.* U Delhi.

38. Saxena, Shabnam. *Studies in oxidation of certain groups of polyphenolics and synthesis of some naturally occurring flavones.* U Delhi.

39. Shah, K.M. *Studies on co-ordination compounds.* Bhavnagar U.

40. Suryanarayana Raju, G. *Some newer aspects of BHC (HCCH) chemistry with special reference to the byproducts of lindane.* U Mysore.

41. Tripathi, Rama Pati. *Synthetic studies in 4-propylcoumarins.* U Delhi.

42. Vaidya, Manmohan M. *Radiochemical analysis of biologically important elements present in some spices.* Nagpur U.

43. Vaidya, Pallavi Vijay. *Preparation and characterisation of lanthanide complexes.* Nagpur U.

44. Vakhlu, Vijay Kumar. *Studies on the system* $CaSO_4$ H_2O. U Jammu.

45. Venkatesh, T. *Effect of corticosteroid on the metabolism of catecholamines in the rat brain.* Bangalore U.

46. Verma, Pratima. *Analytical studies on some organic pollutants.* RSU, Raipur.

47. Vittal, Akella Satyanarayana Panduranga. *Some redox reactions of iron (III)-1, 10 phenanthroline complex-A Kinetic study.* Andhra U, Waltair.

Earth Sciences

1. Hansoti, Subodh *R. Structural and geochemical controls of uranium mineralisation in Sendur Tatapani area, District Sarguja, M.P., India.* Nagpur U.

2. Joshi, Narendra. *Geology of Western part of Pench valley and coal field to evolve basinal characters and coal deposition.* Vikram U, Ujjain.

3. Khurana, Krishan Kumar. *Developing semi-automated processing and interpretation strategies in magnetics.* OU, Hyderabad.

4. Pattan, J.N. *A comparative study of the bauxite deposits from Belgaum and Yercaud areas.* Gulbarga U.

5. Prabhakara Chary, M. *Hydrogeological investigations in parts of tribal and rural areas of Devarakonda Taluq, Nalgonda Distt., A.P.* OU, Hyderabad.

6. Rama Rao, Paluri. *Theoretical studies on the correlation of gravity anomaly with elevation for evaluation of isostatic equilibrium.* Andhra U, Waltair.

7. Richharia, L.K. *Hydrogeological studies of the acquifer around Jabalpur.* Vikram U, Ujjain.

8. Venkateswara Rao, Movva. *Some studies on climate and crops in Rayalaseema (A.P.) India.* Andhra U, Waltair.

Engineering & Technology

1. Agrawal, Jagannath Prasad. *Some investigations on resonantly loaded inter digital transducers in surface acoustic wave devices.* IIT, Delhi.

2. Agrawal, Kailash Nath. *Heat transfer during boiling of refrigerants under swirlflow conditions.* U Roorkee.

3. Agarwal, Subodh Kumar. *Nucleate pool boiling of saturated liquids on horizontal cylinders.* U Roorkee.

4. Arora, Ashwani Kumar. *Velocity distribution and sediment transport in rigid-bed open channels.* U Roorkee.

5. Arvind Kumar. *Optimization of municipal waste water treatment system with activated sludge process.* U Roorkee.

6. Chakrabarti, Syamal Chandra. *Static and dynamic behaviour of prefabricated jointed panels.* U Roorkee.

7. Chauhan, R.C. *Optimal operation of power system with multi-reservoirs as applied to Bhakra-Beas system.*.U Roorkee.

8. Jain, Suresh Chandra. *Influence of superimposed magnetic field on arc stability and weld characteristics in CO_2 welding.* U Roorkee.

9. Krishan Kumar. *Seismic response of friction supported bodies especially girder bridges.* U Roorkee.

10. Kuberan, R. *Elasto-plastic finite element analysis of interaction problems with dense sand considering the effect of stress-path.* IIT, Delhi.

11. Nautiyal, M.D. *Flow to a well in multiple aquifer system.* U Roorkee.

12. Samaga, B.R. *Total load transport of sediment mixtures.* U Roorkee.

13. Singh, Ram Lal. *Investigation on effect of crossflow in boiling heat transfer.* U Roorkee.

14. Singh, Shobh Nath. *Performance analysis of chopper controlled separately excited DC motor for motoring and regenerative breaking operations.* U Roorkee.

15. Srivastava, A.K. *Analytical and experimental investigations of BOD kinetics in an aquatic ecosystem.* U Roorkee.

16. Srivastava, N.K. *Study of shell junctions and openings.* U Roorkee.

17. Sud, Vijay Kumar. *Behaviour of shallow foundations adjacent to slopes.* U Roorkee.

18. Umesh, R.M. *Approximate model matching.* Anna U, Guindy.

19. Viladkar, M.N. *Soil structures interaction in frames.* U Roorkee.

CLASSIFIED ADVERTISEMENTS

UNIVERSITY OF CALCUTTA

SENATE HOUSE CALCUTTA-73

Advt. No. EST/1/85

Applications are invited for the posts of University Professors/Readers/Lecturers in the U.G.C. Scales of pay (i.e. Professors Rs. 1500-2500/-, Readers Rs. 1200-1900/-, Lecturers Rs. 700-1600/-) plus allowance as may be admissible from time to time under the rules of the University, for the different departments of the University. Total emoluments at the minimum of the scale will be respectively as Rs. 2651.70, Rs. 2306.70, Rs. 1518.70. For selected candidates already enjoying U.G.C. or similar scale of pay in a reputed institution of higher studies/Research in India, basic pay will ordinarily be protected. Higher initial pay may be given by the Syndicate to an incumbent in consideration of excellence of academic record and experience on the recommendation of the Selection Committee and the Finance Committee. The University offers Triple retirement benefits, i.e. Contributory P.F., Gratuity and Pension as per University rules. Appointments will be made on merit without discrimination on grounds of race, religion, language or sex; however, working knowledge of written and spoken Bengali is desirable.

II. Essential Qualifications and Experience

(a) Uniformly good academic career with the Master's and Bachelor's degree with honours of this University or equivalent

(b) Evidence of continuing research interest as manifest in published work in reputed research journals or Doctorate degree of a recognised University;

(c) In the cases of posts under the Faculties of Law, Medicine and Technology candidates must possess the essential qualifications and/or experience required for the posts as laid down by the respective professional bodies viz. the Bar Council of India, the Medical Council of India and the All India Council for Technical Education, as the case may be, where applicable.

(d) Teaching experience at the Post-graduate level on relevant Industrial/Professional Experience—(i) for Professors : 15 years (Evidence of successfully guiding research students for P.G. degree is essential) (ii) for Readers : 10 years. (Degrees and Research/Teaching experience shall be in the subject concerned or in an inter-disciplinary field considered relevant by the Selection Committee).

Relaxation

The Syndicate may relax, if so recommended by the Selection Committee on specific grounds, the stipulations regarding qualifications and the number of years of relevant experience in case of candidates possessing exceptionally good academic records and outstanding capabilities. The Selection Committee may also consider suitable qualified persons who may not formally apply.

III. Departments and the corresponding vacancies are as follows:

Humanities and Social Science

1. Department of English : Readers-2, Lecturers-3.
2. Department of Urdu : Reader-1.
3. Department of Hindi : Reader -1, Lecturer-1.
4. Department of Arabic & Persian : Lecturer-1.
5. Department of Sanskrit : Lecturer-1.
6. Department of Pali : Reader-1, Lecturer-1.
7. Department of Languages: Reader-1, Lecturers-9.
8. Department of Library Science: Readers-2, Lecturers-3.
9. Department of Education : Readers-3.
10. Department of Economics : Professor-1, Reader-1.
11. Department of History : Readers-2, Lecturers-2.
12. Department of Ancient Indian History & Culture : Reader-1, Lecturer-1.
13. Department of Museology : Professor-1, Readers-2, Lecturers-2.
14. Department of Journalism : Readers-2, Lecturers-2.
15. Department of Commerce and Management : Professors-2, Readers-2, Lecturers-4.
16. Department of Law : Professor-1, Readers-3, Lecturers-4.
17. Department of Sociology : Professor-1, Readers-2, Lecturers-3.
18. Department of Comparative Philology : Reader-1, Lecturer-1.
19. Department of Philosophy : Professors-2, Readers-2.

Science and Technology

1. Department of Botany (for the centre of advanced study) : Professors-2, Lecturers-2.
2. Department of Zoology : Professors-2.
3. Department of Statistics : Reader-1.
4. Department of Pure Chemistry : Professor-1, Reader-1.
5. Department of Physiology : Lecturers-2.
6. Department of Anthropology : Lecturers-3.
7. Department of Food & Nutrition : Lecturer-1.
8. Department of Physics : Professors-2, Readers-2, Lecturers-2.
    - (a) New Cell in Bio-Physics : Professor-1, Lecturer-1.
    - (b) New Cell in Molecular Biology: Professor-1, Lecturer-1.
    - (c) New Cell in Microbiology and Genetic : Professor-1, Lecturer-1.

(d) For the three Cells in the said department (Sl. No. 8 (a), (b), (c) Co-ordinator in the rank of a professor-1.

(e) For U.G.C. sponsored M.Sc. Course in Electronics Sc. : Professor-1, Reader-1, Lecturer-1.

9. Department of Bio-Chemistry (Science) : Professor-1.

10. In Applied Mathematics : Professor-1.

11. Department of Chemical Engg., : Professor-1, Lecturers-2.

12. Department of Chemical Technology : Professor-1, Lecturers-2.

13. Department of Plastic & Rubber Technology : Readers-2, Lecturer-1.

IV. Additional information, desirable qualifications, specialisations and experience, as applicable:

Department of Languages : One Lecturer each for German, French, Chinese, Tibetan, Spanish, Japanese and Italian and two for Russian.

Department of Journalism for Readers: Specialisation in the theoretical and practical knowledge of Journalism.

Department of Education for Readers: The posts are meant for starting M.Phil/M.Ed. course.

Department of Botany : For Professor : Specialisation in Experimental Ecology/Open. Specialisation in Cytogenetics/Chromosome Research.

For Lecturer : For one Post M.Sc. in Botany with Chromosome Research in relation to Plant Tissue Culture.

For Other Post : M.Sc. in Botany or Zoology with specialisation in Chromosome Research in relation to environmental mutagenesis in higher organism.

Department of Zoology : For Professor : One with specialisation in Immunobiology/Ecology/Animal Behaviour. One with specialisation in Entomology.

Department of Physics : For Professor: One with specialisation in Theoretical Physics. The other Professorship is designated as Sir T.N. Palit Professor of Physics (Open).

For Lecturers : One with specialisation in Theoretical Elementary Particle Physics. One in experimental Physics with specialisation either in Laser spectroscopy or in Solid State Electronics.

Department of Statistics : For Reader: Specialisation in Demography.

Department of Pure Chemistry : For Professor: Specialisation in Organic Chemistry.

Department of Anthropology : For Lecturers : One with specialisation in Human Genetics.

One with Bio Social Anthropology and one with Prehistory Palaeo Anthropology.

Department of Chemical Engineering: For Professor : Specialisation in Chemical Engineering Science.

For Lecturers : One specialisation in Project Engineering/Instrumentation and One Process Control/Transport Phenomena.

Department of Plastics and Rubber Technology : For Readers : 1. One with specialisation in Polymer Processing Characteristics.

2. One with Rubber Polymer Technology.

Department of Chemical Technology: For Professor : Petroleum Refinery Engineering and Petrochemical Technology.

Experience of guiding research students leading to Ph.D. degree in the following fields of petroleum science & technology for which requisite facilities for research have been developed in the department.

(i) Catalytic treatment processes for petroleum products.

(ii) High pressure processes.

(iii) On catalytic reforming.

V. Job Description : The incumbent will have to be a competent teacher, capable of inspiring students towards higher learning and of developing original and significant lines of research fructifying in the production of thesis and publications of outstanding merit. Additionally he will also be required to participate in the general planning and execution of the various academic acti-

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DOCTOR HARISINGH GOUR VISHWAVIDYALAYA, SAGAR

VISHWAVIDYALAYA KARYALAYA
No. 34/SCH/UGC/JRE/NET/2648
24TH/26TH JANUARY, 1985

NOTIFICATION

Applications are invited for the award of U.G.C. Junior Research Fellowships in Science, Life Science and Humanities including Social Science for eight vacancies out of the allocated quota of U.G.C. from those candidates who have been declared eligible in the N.E.T. Examination held in the month of August 1984.

2. The Fellowship will be awarded with effect from 1st June, 1984 @ Rs. 600/- p.m. and with effect from 1st August 1984 @ Rs. 1000/- p.m. and contingency grant in Science to Rs. 5000/- per annum and in the case of Humanities to Rs. 3000/- p.a. could also be enhanced to Rs. 5000/- p.a. in individual cases depending upon the nature of programme if it includes field work, purchase of manuscripts computation charges or equipment etc.

3. Application forms can be obtained from the Scholarship Section of the Vishwavidyalaya Office on any working day during working hours by rendering or sending a crossed postal order of Rs. 5.00 payable to the Registrar, Dr. H.S. Gour Vishwavidyalaya, Sagar alongwith a self addressed envelope affixing postal stamps of 0.50 paise in case of outside candidates. Applications in prescribed forms should be submitted through the Head of the Department/Principal, concerned latest by **28th February, 1985**.

R.N. Dhawan
REGISTRAR

vities, including examinations. His teaching and research experience may be requisitioned for serving the needs of any other department(s) of the university as may be required from time to time.

VI. How to apply : Applications (Seven Copies) in the prescribed form obtainable from the University Sales Counter on payment of Rs. 10/- or on sending a self addressed 60 paise stamped envelop of 11″×5″ size with a crossed I.P.O. of the value of Rs. 10/- in the name of the Calcutta University, Calcutta-73) should reach the undersigned not later than **28-2-1985.**

For persons applying from abroad, submission of application in the prescribed form is not necessary. Such candidates may submit seven typed copies of detailed Bio-Data with an application fees of Rs. 10/- or equivalent not later than **7-3-1985.**

S.N. Ghosh
REGISTRAR

OSMANIA UNIVERSITY
HYDERABAD-500007 (A.P.)

Advertisement No. 1/85
Dated 28th Jan. 1985.

Applications in the prescribed form together with the registration fee of Rs. 5/- payable through I.P.O./Demand Draft (drawn in favour of Registrar, OU) are invited for the following posts in the University service, so as to reach the undersigned on or before **25-2-1985.**

S. No.	Name of the Post	Nos.
1.	Professor in Sociology (VI Plan)	One
2.	Professor of Urdu	One
3.	Reader in Arabic	One
4.	Reader in German (VI Plan)	One
5.	Reader in Electrical Engg. (KSM)	One
6.	Reader in Mechanical Engg. (KSM)	One
7.	Lecturer in English (KSM)	One
8.	Lecturer in Persian	One

Scale of Pay

Professors : Rs. 1500-60-1800-100-2000-125/2-2500.

Readers : Rs. 1200-50-1300-60-1900
Lecturers: Rs. 700-40-1100-50-1600

Age

Professors : Not above 50 years.
Readers : Not above 40 years.
Lecturers : Not above 35 years.

Note

(i) Age limit does not apply to the employees of this University.

(ii) Relaxation in age to the extent of five years shall be granted to candidates belonging to Scheduled Caste, Scheduled Tribes and Backward Classes for the post of Lecturers only.

(iii) The teachers of affiliated colleges who have put in atleast five years of service in any of the college affiliated to the Osmania University be given relaxation in age to the extent of five years.

(iv) Age relaxation can be considered in deserving cases.

14%, 4% and 25% reservations are made for Scheduled Caste, Scheduled Tribes and Backward Classes respectively in the case of Lecturers and Readers only.

If necessary, the applicants will be called for interview.

The University reserves itself the right to reject any application without assigning any reason.

Applications can be had from the Director, University Press and Publications, Osmania University, Hyderabad-500007, AP on payment of Rs. 4.50 in person or by I.P.O./Demand Draft together with postal charges for ordinary registered post made payable to the Director and by sending a self-addressed envelope by 14¼×26¼ cms.

Full particulars can be had from the Director, University Press and Publications, Osmania University on requisition by sending a self-addressed stamped envelope.

REGISTRAR

UNIVERSITY GRANTS COMMISSION

Teacher fellowships for Scheduled Castes & Scheduled Tribes

The University Grants Commission invites applications for the award of following 50 teacher fellowships in Science and Humanities including Social Sciences from teachers belonging to Scheduled Castes and Scheduled Tribes categories, working in Colleges affiliated to Universities for the year 1985-86:—

(i) Short-term fellowship of one year duration for M. Phil. Course—30 Awards
(ii) Long-term fellowship of three years duration extendable by one more year in genuine cases. The total duration will not exceed four years including the M.Phil. wherever provided—20 Awards

FINANCIAL ASSISTANCE

1. Outstation Allowance : Living Expenses Allowance @Rs. 500/- p.m. for outstation teacher fellows whose place of research is 40 Kms. away from their place of duty.
2. Contingency Grant : Rs. 1,500/- p.a. for those working for M.Phil. Rs. 3,000/- p.a. for Ph.D.
3. Substitute Lecturer's salary : The college concerned (if included under Section 2(f) of the UGC Act and eligible to receive Commission's assistance under Section 12(A) of UGC Act) will be entitled to the salary of the substitute Lecturer for the duration of teacher fellowship where a fresh appointment is made.

ELIGIBILITY

Permanent teachers belonging to Scheduled Castes & Scheduled Tribes below the age of 45 years with at least second class in M.A./M.Sc./M.Com. and deputed by the affiliated colleges offering instruction in Humanities including Social Science and Science subjects are eligible for the award of these scholarship. Professional Colleges offering courses of Medicine, Agriculture and Engineering are not covered under the scheme.

Teacher fellowships may however be awarded to teachers in subjects of Basic Science and Humanities who are working in Professional Colleges provided they fulfil other conditions laid down by the Commission for the award of fellowships under the scheme.

Prescribed application forms can be had from the University or Commission's office either in person or through post by sending a 22cm.×10cm. self addressed envelope.

Applications in the prescribed form duly completed by the candidates alongwith necessary enclosures, should reach the Secretary, University Grants Commission, 35, Feroze Shah Road, New Delhi-110001 not later than **28th Feb. 1985.**

davp 823 (14)84

UNIVERSITY OF ROORKEE
ROORKEE

ADVERTISEMENT NO. ESTT(A)/2/85-A-86(Advt.) **Dated : Feb. 2, 1985**

ADVERTISEMENT FOR POSTS UNDER SIXTH PLAN

Applications on prescribed form, obtainable from the Registrar either personally or by sending a self addressed envelope (9″ × 4″) affixed with Rs. 1.10 paise stamps, are invited for the following posts under VI plan Scheme. The prescribed qualifications may be relaxed for candidates with exceptional research/industrial experience. Higher starting salary could be offered to candidates depending on their qualifications and experience. Applicants should generally not be above 55 years. Candidates in employment are required to send their applications through proper channel. Applications received late/incomplete or without required remittance will not be entertained.

Last date for receipt of complete applications on prescribed form along with application fee of Rs. 10/- (by Bank draft or Indian Postal Orders in favour of the Registrar, University of Roorkee) is **28-2-1985** and **15-3-1985** for overseas candidates.

Sl. No.	Department	Professor (1500-2500)	Reader (1200-1900)	Lecturer (700-1600)
	Science & Humanities Departments			
1.	CHEMISTRY	1	1	1
2.	MATHEMATICS	1	1	1
3.	BIOSCIENCES	1	2	1
4.	EARTH SCIENCES	1	1	1
5.	PHYSICS	1	1	—
6.	HUMANITIES & SOCIAL SCIENCES	2 (English, Industrial/ Labour, Psychology or Economics/Industrial Management/Production)	—	1 (Hindi)
	Engineering Department			
1.	MECHANICAL & INDUSTRIAL ENGG.	1	2	—

(for M.E. course in Welding Technology)

Qualifications for Engineering Department

Professor

Essential

(a) A Doctor's degree and published work of high standard.

(b) Consistently good academic record with at least I Class at Master's or Bachelor's level.

(c) Experience in guidance of research, preferably at Ph.D. level.

(d) 12 years' experience of teaching/research/design and industry in appropriate field with at least 5 years in teaching/research.

Desirable

(a) Teaching experience in an Institution of University level.

(b) Specialised industrial experience in the appropriate field.

Reader

Essential

(a) A Doctor's degree OR A Master's degree with published work of high standard.

(b) Consistently good academic record with at least I Class at Master's or Bachelor's level.

(c) 7 years' experience of teaching/research/design and industry in appropriate field with at least 2 years' experience in teaching/research.

Desirable

(a) Experience in guidance of research.

(b) Teaching experience in an Institution of University level. (c) Published research work.

Note

A candidate selected for Reader's post who does not hold a Ph.D. must acquire the same within 5 years of his appointment failing which he will cease to draw the annual increment until he acquires the Ph.D. degree.

Qualifications for Sciences & Humanities Departments

Professor

Essential

(a) A Doctor's degree and published work of high standard.

(b) Consistently good academic record with at least I Class at Master's or Bachelor's level.

(c) Experience in guidance of research preferably at Ph.D. level.

(d) 12 years' experience of teaching/research.

Desirable

(a) Teaching experience in an Institution of University level.

Reader

Essential

(a) A Doctor's degree.

(b) Consistently good academic record with at least I Class at Master's or Bachelor's level.

(c) 7 years' experience of teaching/research/design and Industry in appropriate field with at least 2 years' experience in teaching/research.

Desirable

(a) Published research work.

(b) Experience in guidance of research.

(c) Teaching experience in an Institution of University level.

Lecturer

Essential

(a) A Doctor's degree.

(b) Consistently good academic record with at least I Class at Master's or Bachelor's level.

Desirable

(a) Teaching experience in an Institution of University level.

Note

If a candidate for Lecturer's post possessing a Doctor's degree or equivalent published work is not available or is not considered suitable, a person possessing a consistently good academic record (due weightage being given to M.Phil. or equivalent degree or research work of quality) may be appointed on the condition that he will have to obtain a Ph.D. degree within 7 years of his appointment failing which he will not be able to earn future increments until he fulfils these requirements.

NOTE : 1. Other details required for various posts along with specialisation etc. will be supplied alongwith application forms.
2. Number of posts shown above may change at the time of selection.

O.N. Chaturvedi
REGISTRAR

UTKAL UNIVERSITY

Advertisement No. Estt. I/886-C/VI Plan/A-2457/85 **Dated 6-2-85**

Applications in Seven Copies are invited in the prescribed form alongwith attested copies of Certificates and marklists of all examinations passed (with honours in the degree stage) for the following posts in the Post-Graduate Deptts. of the University on or before the **25th February, 1985** subject to the following conditions:

1. The University reserves the right to reject any or all applications without assigning any reason thereto.
2. No deputation allowance will be paid to the persons holding lien in Govt. Leave salary and pension contribution may be paid only for two years.
3. A panel of selected candidates will be maintained to be valid for one year from the date of selection.
4. No T.A./D.A. will be paid to attend the interview and join the first appointment.
5. No applications will be entertained after the last date.

Sl. No.	P.G. Department	Post	Number	Specialisation
1.	Botany	Professor	One	Taxonomy/and Microbiology (Candidates already applied in response to this office Advertisement No. Estt. I/886-C/VI-Plan/A-6198/84 dt. 3-2-84 need not apply again).
2.	Lib & Inf. Sc.	Professor Reader	One One	
3.	Law (LL.M.)	Reader	Three 2+1 (substantive)	
4.	Physics	Reader	One	Electronics (For collaborative programme with chemistry)

1. Scale of Pay:

(i) Professor Rs. 1500-60-1900-100-2000-125/2-2500/-

(ii) Reader : Rs. 1200-50-1300-60-1900/-.

2. Age of superannuation : 60 (Sixty years).

Essential Qualifications
Professor

An eminent scholar with published work of high quality, actively engaged in research. About ten years' experience of teaching and/or Research. Experience of guiding research at Doctoral level.

OR

An outstanding scholar with established reputation who has made significant contribution to knowledge.

Reader

Good academic record with a Doctoral degree or equivalent published work. Evidence of being actively engaged in (i) Research or (ii) Innovation in teaching methods or (iii) Production of teaching materials.

About five year's experience of teaching and/or research provided that at least three or these years were as Lecturer or in an equivalent position.

This condition may be relaxed in the case of candidates with outstanding record of Teaching/Research.

Explanation

For determining "Good Academic Record" the following criteria shall be adopted.

(i) A candidate holding a Ph.D. Degree should possess atleast a second class Master's Degree; or

(ii) A candidate without a Ph.D. degree should possess a high second class Master's degree and second class in the Bachelor's degree or

(iii) A candidate not possessing Ph.D. degree but possessing second class Master's degree should have obtained first class in the Bachelor's degree.

Prescribed application forms can be had from the Information Counter, Utkal University in person on payment of Rs. 7.60 including local sales tax (Rupees seven and paise sixty) only or by post on receipt of a Crossed Indian Postal Order for Rs. 10/- (Rupees ten only) payable to the Finance Officer, Utkal University, Vani Vihar, Bhubaneswar-751004.

REGISTRAR

INDIRA KALA SANGIT VISHWAVIDYALAYA

KHAIRAGARH (M.P.)

No. AS/Dev./85/1973 (1)
Dated : 28th January, 1985

APPLICATIONS are invited for the following posts in the University Teaching Departments, viz:—FIVE LECTURERS (one each for (1) Musicology, (2) Hindi, (3) History of Indian Art & Culture & (4) Thumri and (5) Violin) and ONE TECHNICAL ASSISTANT for History of Indian Art and Culture.

Scale of Pay

Lecturer : Rs. 700-40-1100-50-1300-Assessment-50-1600/-,

Technical Assistant : Rs. 680-15-800-20-900-25-1000-30-1060/- (Chaudhury Pay).

Qualifications

For Lecturers as prescribed by the University Grants Commission, Details of qualifications for Lecturers as also for Technical Assistant may be obtained from the Registrar.

Posts are permanent and carry CPF benefits and DA/ADA at University rates from time to time. Appointees will be on probation according to University rules. Retirement age 60 years. Post of Violin is temporary.

Reservation of posts for SC/ST will be according to Govt. Rules. If candidates are not available or not found suitable, posts will be filled up from general categories.

Prescribed forms (in four copies) obtainable by sending self addressed stamped envelop of Rs. 1-50 of 25×12 cms. Application fee Rs. 5/- for Lecturer, Rs. 3/- for Technical Assistant in the form of IPO . Last date for receipt of applications in four copies is **28-2-1985** The University reserves the right to keep vacant any of the advertised posts without assigning reasons.

D.K. Ghosh
REGISTRAR

PUNJABI UNIVERSITY

PATIALA

CORRIGENDUM

Reference our advertisement No. 71/PRO/Estt/85 published in this paper on 1-2-1985 inviting applications for the posts of Professor in Sri Guru Granth Sahib Studies, Reader in Sri Guru Granth Sahib Studies and Medical Officer (Female). The last date for receiving applications direct may be read as **18-2-1985,** and through proper channel as **20-2-1985.**

D.S. Kang
REGISTRAR

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University News

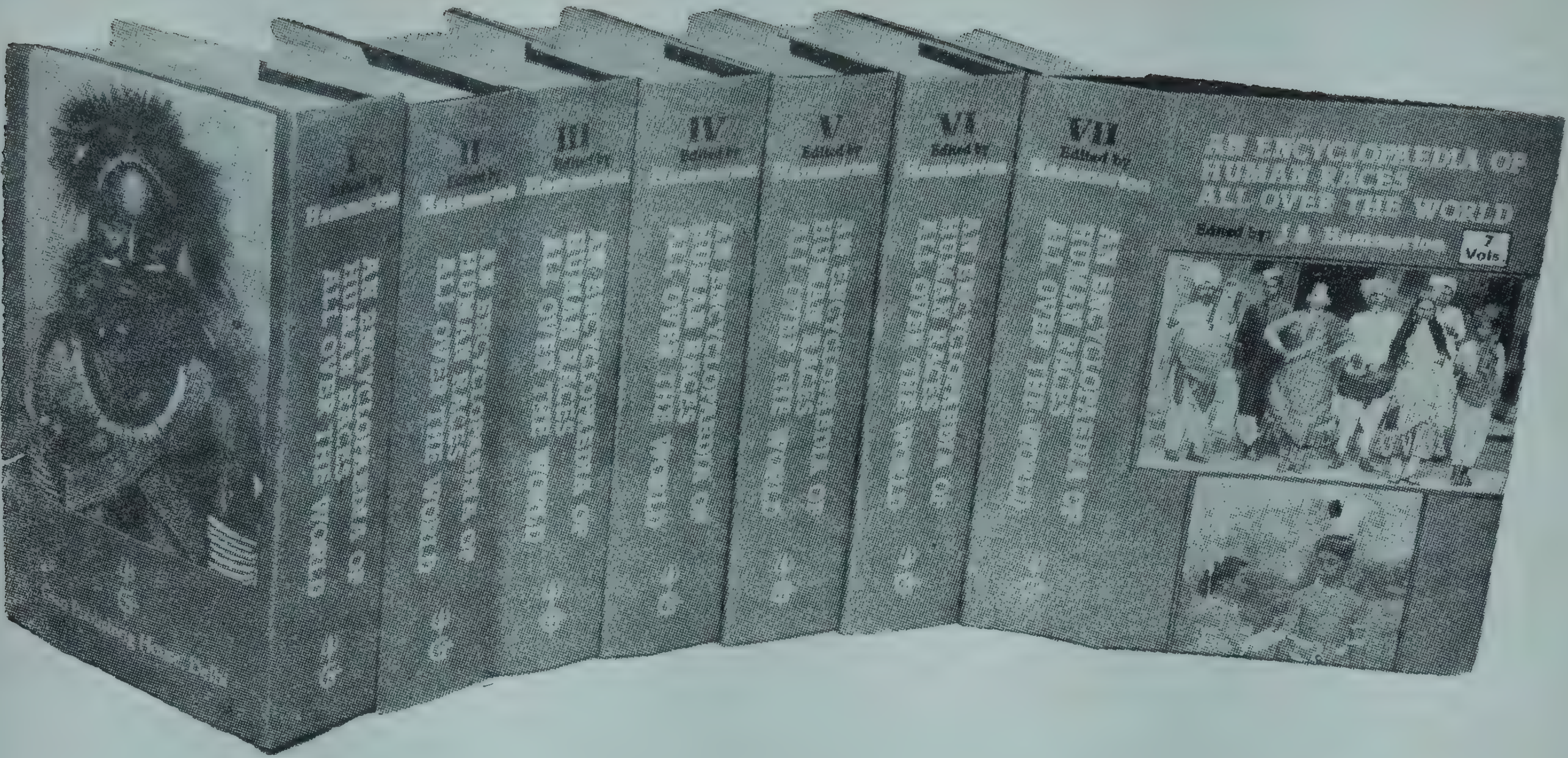
FEBRUARY 23, 1985

Rs. 5.00

SPECIAL ISSUE

AIU ANNUAL MEETING AT SHILLONG

North Eastern Hill University hosts the Annual Meeting of the Association of Indian Universities at Shillong from February 26 to 28, 1985



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SPECIAL ISSUE

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Editor :
M. S. RAMAMURTHY

AIU Annual Meeting at Shillong

The Annual Meeting of the Association of Indian Universities scheduled to be held from February 26 to 28, 1985 at North Eastern Hill University, Shillong promises to be an important one. For one thing this is the first time that the Association is holding its annual meeting in the North East. Union Education Minister, Shri K.C. Pant, would be inaugurating the Annual Meeting on February 26, 1985. This will be a good opportunity for the member Vice-Chancellors to discuss about the directions which the new Government is proposing in the matter of revitalising the higher education system in the country.

Two seminars have also been organized as a part of the Annual Meeting programme. One will be on the proposed National Testing Service. At the present moment a considerable section of society seems to feel that admission into universities should be more selective and broad-based than what it is at present. Also, the prevailing standards in universities vary widely in different parts of the country. These two factors lend significance to this Seminar.

Another seminar, which again is of considerable importance, would be on the UGC Report on Central Universities. This session, to be held on 27th February, will be chaired by Prof. Rais Ahmed, Vice-Chairman of the University Grants Commission. The UGC Report on Central Universities has made far reaching recommendations in the matter of improvement of standards and toning up the work ethics of the teaching faculty. Besides, the report has also many things to say on the appointment of Vice-Chancellors, constitution of various university bodies and the like.

A number of AIU sub-committees are also slated to meet at Shillong. One such sub-committee would be the AIU sub-committee on Deemed Universities. Deemed universities have a distinct status in the higher education system in our country and have special problems to be discussed. In addition, the AIU Equivalence Committee and the AIU Standing Committee would also be meeting at Shillong.

Wide ranging discussions are expected at the General Session of the Annual Meeting on 27th February, 1985. One of the important issues to be discussed is the status of athletics and sports in universities and colleges. Maj. Gen. Narindar Singh, Director General, Sports Authority of India would be addressing the members on this important matter.

Another presentation would be by Dr. Tarlok Singh on the Role of Universities in Poverty Eradication. With the infrastructure facilities available in various universities and the academic leadership that universities possess, it is to be considered as to what extent our higher education system can play a positive and purposeful role in the national task of eradicating poverty in the country.

Some of the other issues which would be considered are introduction of a total internal and continuous evaluation system at the postgraduate level and mutual recognition of degrees and diplomas by the universities, need for a review of the working of the autonomous colleges, methods of reorganisation and broad-basing distance education, involvement of the community and voluntary organisations with higher education and induction of computer systems at the university level in all departments, more specifically in Mathematics and Sciences and technical departments.

The North Eastern region itself is replica of a mini India—of unity in diversity. Shillong, the capital of Meghalaya, is one of the more scenic spots in the region and the members and delegates are likely to flavour the wide and rich variety of tribal culture in the region. All in all the AIU Session at Shillong is full of promise.

23.2.85 **Editor**

A Centre of Excellence in the North-East—NEHU

B.D. Sharma*

In the beautiful hills of the north-east was established an institution of higher learning, the North-Eastern Hill University, in 1973 by an act of Parliament. Earlier the State Legislatures of Meghalaya and Nagaland had passed a resolution requesting the Central Government to establish a Central University to serve their States. The geographical jurisdiction of the North-Eastern Hill University extends to three of the seven political units in the area namely, the States of Meghalaya and Nagaland and the Union Territory of Mizoram. Arunachal Pradesh though formally included in its jurisdiction by the statute, however, did not join it.

The University has four campuses at Shillong in Meghalaya, Kohima and Mezdiphema in Nagaland, Aizawl in Mizoram. The Mezdiphema campus is the seat of the School of Agricultural Sciences and Rural Development and caters to the needs of agricultural education of all the States in the region except Assam and Manipur which have their own agricultural institutions. The central office of the University is located at Shillong.

Our hills, like rest of the country, have great cultural traditions vivacious and colourful, with a large, number of tribal communities contributing to its richness. The Khasis, Digaroes and the Jaintiyas are the major communities in Meghalaya while the culture of Shillong itself is cosmopolitan having been the seat of Government of greater Assam until the early nineteen seventy's. The Naga people comprised as many as twenty eight communities including the Angamis, the Aos, the Desimas, the Chakasangs, the Lothas, to mention just the few. The Mizos form the bulk of the population in Mizoram with small groups of Lakher and Chakanas, two small groups inhabiting the southern fringe of the territory. Each community has its own language which is incorporated in the educational system to different levels depending on the number of takers, the availability of written literature and such considerations. Courses upto the Master's Degree are being offered in Khasi, while Gharo and Mizo are subjects of study upto the B.A. (Pass) level. English is the medium of instruction in all the units at the university level including the +2 classes after the matriculation.

The level of education in region is fairly high, Mizoram having attained the highest levels of literacy in the country next only to Kerala. Nevertheless, there are many tribal regions where education has been slow in spreading and is rather low and some of the communities in these groups could be described even as pre-literate, the level of literacy being less than five per cent. Most of the people live in villages though the central towns are growing at a faster rate attracting particularly the educated young men and women in search of new opportunities. The foundation of the rural economy is shifting cultivation which in terms of technology represents the pre-agricultural stage. With the growing population, growing at the rate it has been this system has become an ecological hazard except in the remote regions which still have extensive forests and support a sparse population. The region itself is endowed with extensive natural resources of flowing water as a large potential of power, luxuriant forests and hills whose wealth remains to be unexplored. Notwithstanding the institution of chiefs in some of the communities, the social structure is egalitarian and the land is communally owned, every individual having a right to the use of it. There are no landless individuals. Deprivation and poverty have not so far raised their ugly heads in these beautiful hills. The villages have a strong tradition of self-governance with full authority to manage their lands and forests, maintain law and order and adjudicate disputes of all descriptions civil and criminal. Everyone high and low earns his bread by the work of his hands maintaining the highest traditions of the dignity of labour.

Seen against this background, the responsibility of the North Eastern Hill University is great. It is no less than a catalytic role in the social and economic advancement of the people so that the best in the tradition is maintained and preserved while at the same time assimilating the benefits of development from the new strides in science and technology.

The first task before the University is to emerge as a centre of excellence in the region so that it can assume the leadership role in realm of ideas and learning. Necessary physical and financial resources have already been committed by the central and state authorities for this purpose. The Shillong campus covering the hills and valleys over an area of about 12,000 acres on the outskirts of Shillong town is being developed in the midst of beautiful pine forests to fulfil this role. In the first stage this campus will have hostel accommodation for 1000 students, residential accommodation for 200 members of the teaching staff on 100 per cent satisfaction basis, besides housing for the supporting personnel, the academic complex, the library, the sports complex and a commercial complex. A substantial part of the residential accommodation is now ready and will be occupied by the members of faculty beginning with March, 1985 after the Conference of the Association of Indian Universities which will mark the inauguration of that new campus.

The location of our campus in Nagaland is likely to be finalised shortly. It is destined to develop as a strong centre in earth sciences with as extensive a complex as that at Shillong. In Aizawl, in Mizoram, our emphasis is on education and associated disciplines. The first department of psychology in the North-Eastern Region was established here in 1983. The Aizawl campus will be located near the new township in an extensive area measuring about 1,000 acres for which a master plan is being prepared.

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*Vice-Chancellor, North-Eastern Hill University, Shillong.

We have the richest library in the North-East with more than 1,50,000 volumes, subscribing to about 1,900 journals including 900 foreign journals in different disciplines. The Regional Sophisticated Instrumentation Centre established in 1984 provides the strong laboratory backup for advanced researches in physical and life sciences. A new dimension to our researches will be added with the commissioning of the Computer Centre in April, 1985.

Our University has a unique locational advantage in a number of disciplines including sociology and anthropology because of the large number of communities experiencing perhaps the fastest ever social change in human history, and in linguistics because of the number of languages being spoken in their original purity, in the life sciences because of the great store of fauna & flora in geology because, of young rock formations and extensive tectonic activities. Our Kohima campus has besides others the departments of Geology and Linguistics.

The infrastructure for Research-in-Study built into this University system has been a great attraction to competent faculty in different disciplines and some of our departments are now well into research in their chosen fields. Nevertheless, the locational isolation of the University has some disadvantages. This is being partially overcome by providing many special facilities to the members of our staff including a 25 per cent special allowance and free residential accommodation with hard furnishing. Those posted to the other three campusses in Nagaland and Mizoram are entitled to a further inaligned allowance of 25%. These special provisions have facilitated mobility and the response of the academic community is now very encouraging. They have also helped the university reduce turnover among the faculty. These welcome physical facilities are not enough. The University is keenly aware that academic growth requires a constant interchange of ideas not only among the researchers in the field discipline but also among scholars from other disciplines. It has taken a number of years to stimulate this inter-discipline and intra-discipline interaction both within the University and with institution's of higher learning outside. The University encourages inter-research and teaching. Many sister disciplines have substantial common courses which provide an opportunity for faculty members in different departments to come together and join hands in teaching and research. At the Master's level every student is obliged to take at least one course from outside the department unrelated to his subject. He may also take one more course of his own choice from outside his department which may or may not be related to his main discipline. This arrangement obliges every department to give at least one course which is specially designed for students belonging to other disciplines. These courses are sufficiently advanced and are addressed to a mature audience. A welcome off-shoot of the arrangement is that the faculty get an opportunity to look at their speciality in a broader perspective and interact with students from other disciplines.

The North Eastern Hill University has an ambitious programme of academic exchange with other centres of learning in the country. Our academic year being from the 1st of March to the 18th of December those of our teachers who are interested in visiting other centres of learning for their researches-in-study have the advantage of a long spell of three months every year outside, within the country or abroad as their arrangement may be. Many of our faculty members are taking advantage of this facility. The university is also inviting scholars from other institutions to spend sometimes with us particularly in the first semester i.e. 1st March to the end of June when most of the teachers in the rest of the country have their summer vacation. The scholars are provided full hospitality by the university during their stay besides other facilities for pursuing their studies in research. Pursuing the same line, the University is also finalising formal exchange programme in different disciplines with other university departments and centres of study and research. In addition, those scholars who are interested in any study relating the North-Eastern region are also provided necessary facilities by the University departments for that purpose. As our campus gets built living accommodation for visiting scholars becomes freely available, we hope to make NEHU a centre of excellence and a focal point for the exchange of ideas on a continuing basis year after year.

This centre of excellence must serve the region as in the North Eastern Hill University act and become a positive force in the social and economical advancement of the people. In the context of the rich resource and endowment the key to development of this region rests on the primary sector of the economy and in converting the resource potential into economic wealth and services. As a late comer in the race of development, in NEHU the region has the advantage of finding the latest developments in science and technology that can be suitably adapted and pressed into its service. We are very concerned about the ecological viability of developmental programmes. Our Centre for economic development is engaged with these problems. There is another important dimension of this problem. With the spread of education the University degree has acquired great social status and there is rush to the urban centres for a variety of position in the tertiary sector. Our region faces the peculiar situation that the primary sector is almost the secondary sector while the tertiary sector is grown out of proportion.

The motive force for development in the primary and the secondary sectors has to be provided by the educated young men and women who are at present keen on joining the tertiary sector. This question has been reviewed by our academic bodies and we have concluded that direct access to the colleges cannot be stopped in the near future, unless the academic programme at the postmatric level is suitably modified. We have introduced a scheme of vocational education at the +2 level with a difference from the national model. The vocational stream in view of its critical importance is considered superior compared to the academic stream and we expect that brighter students will eventually take it. In our programme those who opt for vocational stream will have equal access to the academic stream at the undergraduate level.

The same thinking pervades the introduction of non-traditional courses in undergraduate classes. A number of agri-based non-traditional courses like horticulture, pigeonry, plantation crops, etc. have been introduced in the arts stream. The emphasis is on providing the students with necessary skills in these lines so that they can think of returning to their villages and earn a decent living making use of the available resources and taking advantage of the various developmental programmes launched under the five-year plans. These courses are becoming quite popular. Our school of agricultural sciences and rural development is taking a leading role in this sphere. The Agri-based non-traditional courses are being organized under the leadership of this school initially on a pilot basis to be thoroughly reviewed in the light of experience. It will then be thrown open for general adoption. Another important programme of the university is correspondence education in agriculture. It is addressed to those educated young men who have passed at least class 8th examination and are pursuing agriculture or allied occupations. These courses have followed the principle of correspondence education in technical subjects where those who are engaged in factories are enabled to acquire theoretical knowledge through correspondence. The same principle has been extended to agriculture. The experience of these young men in the field is treated as equivalent to their level. A correspondence course for three years qualifies a student to a certificate equivalent to the pre-university examinations. In the second phase of this programme it is envisaged that a three-year course after pre-university level will be equivalent to a diploma in agriculture and another three years will take him to the level of a degree in agriculture.

The North-Eastern Hill University thus is concerned both about its development as a centre of excellence and acquiring a prominent place in the community of institutions of higher learning in the country and also for forging links with the people extending the benefits of new science and technology to them on a continuing basis. The University is dedicated to the goal of healthy viable economic development in the region and improving the general quality of life. While doing so, it can become an important centre where scholars from all disciplines will come together and contribute significantly to the world of ideas. □

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The North Eastern Region and the University

M.S. Ramamurthy*

Very few of the more beautiful spots of the world would match the scenic splendour of the North Eastern Region of India. The river plains of Brahmaputra with their rich alluvial soil, the lofty, snow-clad peaks of the Himalayan ranges, a region of forested hills and mountains and a mountainous plateau which basically constitute the terrain and landscape of this region is not only a sheer beauty to behold but is equally rich in more than one sense of the word. Its natural wealth ranges from fossil fuel embedded within its bowels, to extensive silamanite deposits, and to forests of pines and other varieties of timber. If the terrain has its own beauty it has also its own story to tell not only in terms of the history of the people living in this region but also their cultural diversity.

The population is more 'rural' than 'urban'. (In Nagaland it is 90% rural). Only it is not uncommon to see large villages with a population of even over 5,000. Another characteristic which is common to the people in the entire region is their passion for beauty and colour. It inspires them to decorate almost everything they use or wear. The entire region is rich in tribal culture and folklore. The population is largely tribal. In Nagaland alone there are reported to be 17 major tribes and several sub-tribes with about 60 spoken dialects.

Despite the rich natural resources, the people in the region, as in other parts of India, have their own tales of woe as far as living conditions are concerned. A rough guess would be that nearly 60% of them are living below the poverty line. No wonder then that the literacy rate in Meghalaya and Nagaland is only about 28%.

The only means of communication for the masses is the road which too has been developed somewhat only recently. The terrain makes things difficult.

The "land of the rising sun"—the literal meaning of Arunachal Pradesh—has an area of over 81,000 sq.kms. Meghalaya, or literally the abode of the clouds, has an area of over 22,000 sq.kms. Nagaland, the connotation of which name has been interpreted in various ways, has an area of over 16000 sq.kms. These together comprise the area of jurisdiction of the North Eastern Hill University.

The North Eastern Hill University has therefore to cater to a wide variety of population, essentially tribal, dispersed over a wide área with an inhospitable climate (the world's wettest region—Chirapunji—is in Meghalaya) and a terrain which makes normal movement arduous. At the same time the entire region is a sensitive one in terms of India's territorial integrity bordered as it is by Burma, Bangladesh and China.

The story of the birth of NEHU is as exciting as the history and culture of the region it seeks to serve. The seeds of the University were sown as early as August 1963 when the tribal communities of North Eastern India highlighted the need for education of an all India character by adopting a resolution. The dominant feeling at that time was that only a central University could contribute to the cultural development of the various and varied hill tribes of the region and enable them to acquire a 'national slant to their outlook and aspirations'. A committee appointed by the University Grants Commission and the Ministry of Education. Under the Chairmanship of Prof. A.R. Wadia, (who was a Member of Parliament as well as of UGC) recommended in 1965 the setting up of a federal type of university 'with a constituent college in each important centre, and with its headquarters at Shillong. But it was not until 1973 that the necessary Act to constitute the University could be passed by Parliament. The Act however established and incorporated a teaching and affiliating university.

The University came into being on July 19, 1973, when its first Vice Chancellor was appointed. It began to function from a rented house in a suburb of Shillong, with the Vice Chancellor, his Secretary and an Officer on Special Duty. The University began to pursue the objectives laid down in the act with all dedication and dispatch.

Affiliation of the colleges in the region and planning for the establishment of post-graduate departments were the new University's first priority. It has been an exciting saga of growth for the University since then. The following table reveals the excitement in figures:

Particulars	1975	1980	1985
1. No. of Schools in the University	8	8	8
2. No. of Depts. in the University	9	21	27
3. No. of teachers			
(i) University	25	105	210
(ii) Constituent Colleges		36	84
4. Student enrolment			
(i) PG Departments/ Research Scholars	277	725	1,258
(ii) Const. Colleges (UG)	539	888	950
(iii) Affiliated Colleges (UG)	12,293	20,153	23,479
5. No. of Affiliated Colleges	24	38	40

An important orientation, as far as the North Eastern Hill University is concerned, is to develop community oriented education through extension programmes, seminars, workshops and short-term courses. This assumes greater significance in this region in view of the already noted facts about the

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**Deputy Secretary & Editor, University News, AIU, New Delhi.*

population being basically tribal, rural and widely dispersed. The Centre for Adult and Continuing Education started its efforts during the Fifth Plan period with the objective of providing these facilities.

Some of the more unusual departments/schools which have been created essentially to take care of the peculiar needs of the region deserve to be noticed. One is the School of Creative Arts. The tribal culture, art and the artistic sensibility of the pupulation needed to be protected, preserved and enabled to express itself in more glowing terms. Towards this end the students had to be taught basic principles of various artistic activities and enabled to appreciate 'other art cultures'. Though the School has itself not yet taken shape, a Centre for Creative Art came up in August 1977 to coordinate the various art programmes. It has also initiated research programmes to gather and systematise information on local art and artifacts besides organising courses on art appreciation. A Research Centre in Tribal Art and for Tribal Welfare is being established. The Centre has drawn up ambitious plans for its various activities and programmes.

Some stages of consolidation and growth of the university as a whole are worth noticing here. The Meghalaya Government made over an area of more than 1,000 acres for the establishment of the Central Campus at Shillong. The foundation stone of the main campus was laid by the President of India, Giani Zail Singh on April 30, 1983. In addition, two campuses have started functioning. One was set up as far back as 1979 at Aizawal in Mizoram and the other at Kohima in 1978 in Nagaland. These two campuses take care of some of the outer reaches of the territorial jurisdiction of the university. These were set up basically because of the cluster of academic facilities already available in these areas.

Another project which would merit special mention is the Open University project of the university. The project is an attempt at establishing a link between the university and the common man. The basic objective is of course education. But this education is going to be mostly through Radio and TV. Initially about two lectures a week or 104 lectures a year have been planned for. The inaugural address for this was delivered in July last year by the present Vice Chancellor, Dr. B.D. Sharma through the All-India Radio at Shillong. Many short-term and vocational courses are planned for implementation under this Open University project.

The Planning Commission of the Government of India has also funded the university for a prestigious research project on Himalayan eco-development.

Changes have also now been made in the examination system at the postgraduate level. It has been decided that all examinations at this level will be conducted centrally under one calendar of schedule. The paper setting as well as script evaluation is being done outside NEHU.

At the undergraduate level the syllabi have been restructured and a compulsory general foundation course for all undergraduate students has also been introduced.

With a view to promoting and undertaking publications in various areas and for different target groups, the university set up in 1983 the North-Eastern Hill University Publication Unit. The areas covered broadly are the university level textbooks, supplementary reading material and reference books. Already 8 textbooks have been published besides a few research works, the University Journal and NEHU Journal of Social Science and Humanities.

Central to the University's academic activities is the NEHU's library system consisting of a central library, 5 departmental libraries, 2 campus libraries and 2 constituent college libraries. This integrated library system has a collection of more than 1.06 lakh of volumes (excluding those of the 2 constituent colleges). It subscribes to more than 1,000 learned periodicals. About 200 readers consult the library daily and on an average, 385 volumes are issued per day. The library also provides documentation and bibliographical services and reprographic facilities. In addition, it helps readers through inter-library loan services. It also runs a Certificate course in Library Science of 4 month duration under the auspices of the Department of Continuing Education.

Arunachal Pradesh means 'the land of the rising sun'. The sun in the North Eastern region rises earlier than in other parts of the country. As the President, Giani Zail Singh, stated in his address at the time of laying the foundation stone of the main campus at Shillong in April 1983, the sun dispels darkness. The university at Shillong is trying to dispel the darkness of ignorance and bring the light of knowledge into individual's life not only for the individual's self fulfilment but also for national progress. Perhaps it is the only university in the country which since its establishment in 1973, has not witnessed a closure of the university on account of any student trouble. This perhaps is an indication of the deep desire and motivation on the part of the youth in the region for education. It is in a way also a measure of the success achieved of the university.

The region is a sprawling one with communication being difficult because of the terrain and the stage of economic development. The diversity of its multilingual and multi religious ethnic groups with deeply entrenched loyalties to one's community is another important characteristic of the region. Added to this is the attachment to beauty and colour, which finds expression in various aesthetic forms — dance, folklore, music. It is this kind of a society in this kind of a region that NEHU seeks to serve. The University is constantly evolving various programmes to meet the aspirations of the region. The most important consideration is of course economic progress and national integration. These are no mean objectives to achieve. ☐

Educational Planning

Ali Ashraf*

Paper presented at the Seminar on "Higher Education" organised by the United States Educational Foundation in India on 15th January, 1985, at India International Centre, Lodhi Road, New Delhi.

Understanding India is a matter of moods. It is also a matter of predisposition, for India presents facts of opposite kinds in their most contrasting colours. One has to approach this country as one may approach a woman: if you approach her with love, she reveals her beauty; if you approach her with cynicism, you notice the mud only. But this lady has survived many intruders in her privacy and preserves her distinctive qualities amidst all the changes. There are people galore who forecast its doom, but she goes on, like the Ganga, carrying the holy water and the filth in her bosom.

This observation is necessary to understand any aspect of India's life and activity. Because of her chequered history, its enormous diversity, her style, a style that encourages each to follow his or her own path, India defies straitjacket definition of her problems and uniform solutions. She has the remarkable talent of exposing the hollowness of the high and the worth of the ordinary. She has also the knack of bringing down the sublime to the trivial, and of elevating the trivial to the sublime. India rises above the logic of contradictions and shows how monstrous and mysterious the complexities of life are. An example of this is her educational system. Ordinarily an educational system like the brain, ought to provide the guidance and direction for the body. It does that in India too, but it also reflects, like the liver, all the ailments of the organism. How to coordinate the brain and the liver with the rest of the body is the task of educational planning in India? This is a task which one should perform with grace — without beating the trumpets of our achievements and without shedding tears or crying wails of despondence.

India has indeed done well in some respects. Its scientists, engineers and doctors, its lawyers, accountants and civil servants — at least the best among them, are world class. They can hold their head high in any international forum. Whether their number is large or small depends on our way of looking at it, and I don't use statistics because they can be misleading as damn lies. But one stark fact stands out that while we may take legitimate pride in our achievements in this respect, we find that behind these loom large the vast illiteracy, the army of the educated unemployed, and the simultaneous export of our trained manpower to other countries and the starvation of our own villages of these trained people. The illiteracy is colossal, and the rate of literacy is still small. There are many efforts being made by the Ministry of Education and the University Grants Commission, but not all children of school-going age are yet in school, not to talk of the cumulative load of adult illiteracy. The Ministry and the U.G.C both have sponsored programmes of adult education and mass literacy, through units such as State Resource Centre for the training of mass literary teachers and Adult and Continuing education. Many universities are taking to these programmes, but I am not aware of any evaluation of these programmes and their effectiveness. Judging by the intentions and expenditures involved in these programmes, it would appear that they are making great headway, but the experience of our planning shows that mere intentions and expenditures are no faithful clues to the actual effectiveness of any programme.

Next to illiteracy, the problem of unemployment among the educated is the most serious one and in fact reflects the defects of our general as well as educational planning. This phenomenon is fraught with unmitigated frustration among the youth and also indiscipline on the campus. It is common experience that all those who join institutions of higher learning are not interested in it or qualified for it. It is only for want of other avenues of gainful employment that the students swarm to the colleges and universities for admission. The large number of university-graduates are not only not properly educated, but they are also in most cases unwanted graduates. These students are drawn into unacademic and even sometimes anti-social activities thus disrupting the normal and proper functioning of universities. This is a problem widely recognised as a potential threat not only to the academic sanctity of universities but also to the law and order situation in our country. The Government in recent years has sought to promote vocationalization at the +2 stage of the school system. The vocational stream at this stage could direct large number of students into job-oriented channels, and thus prevent the unnecessary accretion of the youth to universities.

One often hears however that this programme has proved a flop, mainly because the response to it has been poor. One can understand the reasons for the tardy response to this programme. We have over-valued the 'babu' occupations and the youth still aspires to get a degree and a job in an office.

**Vice-Chancellor, Jamia Millia Islamia.*

Here the colonial tradition dies hard, and the craze for a job in the bureaucracy is a prospect every youth dreams about. The problem however is not merely one of colonial tradition, it is also in fact one of our value system. The arts and crafts, or jobs connected with technical skills, carpentry, tailoring and so on are not accorded prestige, and in some case they do not even fetch profit, and certainly no power. A job of even a peon or a clerk carries with it the prestige and the authority of government. Unless the wages of tailors, carpenters or barbers are high enough, the already existing cultural stigma of the caste would continue to block people's voluntary entry into these occupations. It seems that dignity of labour needs to be backed by decent remuneration and social security programmes before the vocationalization programme can succeed. We however cannot make the vocationalization programme contingent on social development. Like many other programmes in India, we need a simultaneous and double pronged programme of vocationalization and social change to break the vicious circle of backwardness and failure of reform.

Of late there has been frequent references to the need to delink degrees from jobs. A consulting meeting of experts held at the National Institute of Educational Planning and Administration over two years ago was of the view that jobs should be delinked from degrees. There is no doubt that vocational and continuing education together could diminish the need for higher degrees in seeking higher job opportunities. It is however utterly unrealistic to expect that mere delinking of jobs from degrees would usher in any major or large change in the problem of unemployed educated or would result in the reduction of enrolment at universities. The need for higher education remains and, with the increasing number of school students, the pressure on universities will continue to mount unless more job opportunities are created after +2 stage. Delinking of jobs from degrees will of course widen the area of competition and offer a chance to many people to compete for a given number of jobs but it is a marginal solution to the problem of unemployed educated. The real substantial solution lies in designing new job-oriented courses and in improving the standard and status of vocational crafts. The scope of employment for such vocations is of potential significance both in India and abroad. Indeed my observation is that we have not had our full share in trade and employment in West Asian countries and we should tap this market by pushing our skill-oriented educational programmes. It is therefore not so much delinking of jobs from degrees, as the creation of more job opportunities and the skill-oriented education that we can achieve some breakthrough in the areas of education and employment.

It is an irony that whereas our people in villages and towns are starved of the basic amenities of health and education, our doctors and scientists, teachers and engineers, are attracted towards foreign countries for higher wages. An open society such as India, may find it difficult to stop the skill drain. However, it should be within the domain of practical politics to devise ways and means of ensuring that our educational system does produce experts/functionaries of the type who will attend to the needs of the nation. An example comes to my mind. The medical profession is generally averse to service or practice in the villages, and even doctors posted in the primary health centres continue to stay out of the countryside. The more enterprising have clinics in towns and cities and quite a few among them migrate to western and West Asian countries. The Indian Medical Council does not countenance theintroduction of any course lower than M.B.B.S. in the name of standards. In seeking to uphold standards the Council has caused a situation in which the people in the countryside are left in the hands of quacks. The pursuit of perfection can be dangerous and the wisdom of planning lies in balancing the ideal with the real. Before Independence there used to be a medical course called L.M.P. after matriculation, and it served the people. There is a hierarchy of degrees in the engineering and technological education from certificate and diploma to higher degrees. There is no good reason why we cannot revive L.M.P. who will readily serve the villages which are not attractive to the M.B.B.S. doctors.

This brings me to the point where we can see the great hiatus that divides the educational system — the top of the pyramid standing on the mass of illiteracy and unemployment among the educated. It is of course necessary to provide school education on a universal basis in the interest of equity and development, as well as personal advancement of our people. Thus literacy and employment programmes are the pre-requisite to the success of any educational policy. This is however necessary but not sufficient. An educational system is designed to provide not only employment but also a direction to the nation's future development, the kind of society and polity that it seeks to be. Education in this sense is a most significant activity of statesmanship. Education must accordingly aim to produce men of character and commitment who will provide leadership in the various sectors of national life. This task is both important and stupendous for India which, more than most countries of the world, is multifaceted and pluralistic in its culture. India is extremely receptive to cultural influences from outside and our educational system reflects this openness. This is our strength because such open receptivity helps India to accommodate her diversities.

There must however be beneath the diversities a conscious unity of civility and civic culture. There is these days a talk about the place of value education in universities but these values cannot be taught separately as is religious instruction in some universities. The moral education must form part of the broad culture, and must inform the way of life actually symbolized and lived by a university. The education of values is not imparting of knowledge but the formation of character and style of life. These have to evolve around the practices of day to day university life rather than class-room instruction of principles. Here the role of the teacher is paramount. And no matter what may be the outline of an educational plan, it is necessary to ensure the moral quality of teachers. A teacher of a university must of course be competent in his discipline, but above all he must symbolize the virtues of independence, integrity and objectivity. These are difficult qualities to cultivate in these days of pull and push, but politicization makes the task still more difficult. A distinction therefore must be made between politicization as manipulation or interference on political grounds and educational pursuits and planning in the interest of the nation in keeping with the guidelines of public policy. The Centre and the States can do a lot to keep the former to the minimum and to change the moral climate of universities.

The picture that emerges is this: universities cannot ignore the enormous and urgent tasks of making education productive and functional in relation to the needs of the society, hence the importance of programmes such as vocational and continuing education to serve the needs of the people; and of improving the quality of higher education so as to produce not merely technical experts but also men of character and commitment.

Much of planning, however elegant and noble, is vitiated by poor or indifferent implementation. There is a big gap between the decisions of the Central Secretariat and the conditions in the field. Much of the training imparted to educational administrators is often irrelevant and therefore unintegrated to their job requirements in the field. Attention has to be paid to local conditions, and the State Governments have to exert harder to line up and prevent the abuses that arise due to political factors.

How to ensure sound planning and effective implementation? One thing is sure, it cannot be done by issuing blueprints of noble ideas and by practices of ignoble character. There in no substitute for the commitment and determination of the political leadership. Plans are often made and left to rot on the shelves. Plans are often not matched by the necessary guidance or facilities. Besides the need for political will, it is necessary to evolve and involve local people and institutions in plan implementation. One often, for example, hears that primary schools cannot be built in all the villages because the building specifications of a prescribed type cost too much. Building is useful, but having a teacher in any village could trigger off the process. A village could be encouraged to build a school with whatever materials are available locally. The government bureaucracy would do well to trust the people and allow them to do things through institutions of their own. This is a situation where a pinch of enthusiasm and trust could ensure popular initiative and enterprize more than tons of expertise. ☐

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Inaugural Address delivered by Shri L.K. Jha, Chairman, Administration Reforms Commission, at the Second National Conference of Indian Association of Educational Planning and Administration held on January 5, 1985.

"I feel greatly honoured by the invitation to inaugurate the Second National Conference of the Indian Association of Educational Planning and Administration. Quite frankly, I do not feel I am the right person to have been chosen for this important task, for while I know something about economic planning and administration, I can lay no claim to know much about the educational system. It is only when, as Governor of the State, I was the Chancellor of the two Universities in Jammu & Kashmir that I had some opportunity of looking into the educational system, particularly from the vocational angle.

In some senses, the viewpoint of the educationist is different from the viewpoint of the economist. The former concentrates on enriching the mind of the students and the intellectual calibre of the community. The latter aims at enriching the pockets of the educated and the purse of the community. Further, while educationists keep on pleading for more resources to be allocated to education, the economists keep on harping on the paucity of resources.

Although, therefore superficially the points of view of economists and educationists may seem to be divergent, in fact, there are good reasons why they must converge. First of all, both must recognize that the educational system must satisfy not the educationists or the economists but the people—particularly the students and their parents. Even among the people, there are differences of emphasis in terms of what they expect from education. The focus of the rich is primarily, though not exclusively, on making their children learn. The focus of the poor is primarily and almost exclusively on making their children earn. Since in our country it is the poor who predominate, the efficacy of the educational system must be judged in terms of the employment opportunities which the educational system throws open. This cannot, of course, be the exclusive aim of the educational system. A balance has to be struck between the vocational aspects of education and its cultural aspects. The two are not mutually exclusive concerns. There are very few tasks, the performance of which does not improve by those responsible for them having a wider vision than that of a skilled operative performing the job assigned to him for the wages he gets. Likewise, the cultural heritage cannot be retained, much less evolved, by those who cannot make both ends meet. If it is true to say that man does not live by bread alone, it is equally true to say that he cannot live without bread either. It is not a question of choosing between one and the other but of achieving a proper blend between the two.

Similarly, from the resource angle, education plays a dual role. It entails outlays, no doubt and therefore, creates a drain on resources, but it also enhances output and, therefore, augments resources. Economists have come to recognise that investment in human capital gives a very high yield indeed, because it makes investments in agriculture and industry far more productive. However, to say this does not mean that education can pre-empt resources and claim an over-riding priority. A balance has to be struck in the allocation of resources between rival claims on them. The meeting point of both the economic and the education viewpoint should be a recognition of the importance of making adequate allocation of resources for education and of ensuring that such resources as are made available are put to the most effective use with the minimum of waste.

If we survey the educational landscape in India today in the light of the considerations and criteria, I have just spelt out, the picture does not appear to be too satisfactory. A number of major weaknesses and shortcomings become evident even on a superficial assessment of the situation.

First of all, too high a percentage of the population it still illiterate more than three decades after the commencement of planned development. Universal literacy should be regarded as the very minimum of the educational requirement of the population as a whole both from culture and from an economic angle. Further, this failure—and I do not want to use a milder word for it—is not wholly or even mainly attributable to the inadequacy of financial resources provided for education. The shortages have been a little more of manpower, organisation, motivation and other factors than of finance. In many instances, there are schools without teachers and alsowithout enough students, though equally in some areas, particularly urban ones, it is difficult to get children admitted to schools which anyhow are overcrowded.

Secondly, at the other end of the spectrum, there are people who have had the benefit of university level education in Arts and Science as well as in technical fields, including engineering and medicine who are without jobs and looking in vain for employment. The costly education they have received has been a major drain on the resources available for education which unfortunately does not give them the kind of satisfaction, primarily vocational, which they hoped to derive from the course they took.

Thirdly, at all levels there seems to be a shortage of adequately trained personnel to perform a wide range of jobs with requisite efficiency. The kind of service one gets from the telephone system or the banking system is clear evidence of weaknesses in training and education. Further, posts of doctors, teachers and engineers in backward areas remain vacant because the eligible candidates do not want to go and serve in them. In addition, each year the Public Service Commissions are unable to find adequately qualified candidates to fill a wide range of posts for which they advertise. The kind of imbalance between the demand and the supply for well-trained and adequately qualified personnel which is in evidence is the result not so much of the paucity of resources but their faulty allocation. The co-existence of shortages and surpluses calls for a re-deployment of the available resources which are not being put to their optimum use. While the case for a larger allocation of resources must stand on its own feet, there is little doubt that there is some misallocation of available resources.

I hope, your deliberations in this Conference will bring out whether and to what extent the weaknesses to which I have drawn attention are real and, if so, what remedial action is called for. For my part, I propose to address myself to three basic issues, firstly, how to ensure that all the children do have a certain minimum of schooling, secondly, how to ensure that the educational system provides the kind of training and produces the kind of educated and trained personnel in the right proportion for whom opportunities for gainful employment are being generated by the economic development which is taking place in the country, and thirdly how to achieve these objectives without overstraining our financial resources.

At first sight, it may seem that the reason why there is so much concentration of illiteracy in the rural areas is that they have such few schools while the cities have plenty of them. But if we look deeper, we find that in most of the larger cities, there is paucity of schools, and the demand for schooling facilities provided by the State far exceeds their supply. They are overcrowded and parents find it difficult to get their children admitted to them. In consequence, privately run establishments are coming up, some of which are excellent —and costly—while others provide a poor quality of teaching, though they are quite expensive too.

Resource-wise, it may not be easy to allocate more funds for schools to be set up in major towns. Private schools should, therefore, be encouraged to fill the gap between demand and supply, but care should be taken to ensure not their cheapness but the standard of education which they provide.

In rural areas while more schools are clearly needed, much more attention needs to be given to stimulating the demand for schools than their supply. One reason why poor families are not particularly keen on sending their children to schools even when the education is free is that in some ways schools for them represent an alien culture. Somehow, in our national thinking, not just among the rural poor but even among the educated, on account of traditions coming on from British days, there is a feeling that the educated do not work with their hands but sit on a chair behind an office desk. This leads even engineers to apply for administrative jobs in Government and managerial or marketing jobs in industry rather than to work on the factory floor. But rural communities engaged in agricultural activities see no purpose in giving any education to their children. It is only those who aspire that their children should do better than their parents and refrain from manual work who want to educate them. The fact that school holidays are timed to reflect the preferences of the urban communities rather than the work cycle of agrarian life is a further disincentive for parents to leave their children in schools and be without their services at the sowing and harvest seasons. Visible links between the curriculum of rural schools and the economic activities prevalent in the locality, the introduction of the kind of work ethic which Gandhiji had initiated in schooling at Wardha should, therefore, be considered. The teachers should, as far as possible, be local. Keeping school premises clean and in good shape generally, should be a task shared between the teachers and students without involvement of Karamcharis. The use of uniforms in rural areas should be dispensed with. Even school buildings should not be of a higher standard than the dwellings in the locality.

I now turn to the question of achieving a better match between the availability of trained personnel and the capacity of the economy to absorb them in gainful employment. The traditional way of dealing with this problem is for manpower institutes to make projections of the demand for different types of trained personnel and then for the State to attempt to set up institutions to impart the appropriate training to appropriate numbers. What is forgotten in this approach is that parents and students have their own preferences for the kind of careers for which they should qualify themselves. Since, as rule, Government is looked upon as the biggest employer and for most government jobs a degree is insisted upon as the minimum qualification to be eligible for an appointment, most parents try to send their children for a college education. Further, because of their pressure, State Governments are compelled to open more colleges and universities. Unfortunately, as only a small proportion of the degree holders get absorbed in government jobs, the number of the educated unemployed keeps swelling. On the other hand, institutions imparting vocational training do not, as a rule, attract too many students, though to this general principle, medical and engineering colleges are exceptions and there is considerable pressure for admission in them.

In order to rectify these unfortunate trends which also result in a wastage of resources, my first recommendation would be that recruitment to government jobs as well as many other jobs should be at the +2 stage. Thereafter, the selected candidates not only may but should be given higher education of a kind relevant to the tasks they will be called upon to discharge. Thus, administrators could be asked to take a degree course which would comprise the Official Languages and subjects like Economics, Politics, Sociology, History and Law. There is a real waste when those with degrees in Mathematics, Sanskrit or Engineering get into the IAS. Likewise, those selected for the Audit & Accounts Service or Revenue Service could well get some training in Accountancy and other allied subjects. Those joining the Foreign Service could study History, International Law and a foreign language in addition to some basic compulsory papers.

The advantages of making such a change would be many, particularly if banks and business houses also follow a similar practice. The cost of the higher education would be met substantially by the employers. The college campuses will consist primarily of people who look forward to a career rather than face a bleak, uncertain future. Those who come for a degree course without the sponsorship of an employer would normally be interested in the subject in which they are studying and would take up a career in research and teaching. Otherwise, most of them would seek entry into vocational institutions, of which more may need to be set up, preferably by converting the existing college buildings to house the vocational institutions. In vocational training, special emphasis will have to be placed on those which throw open possibilities of self-employment, such as law and medicine. In regard to law, there seems to be no reason why a degree in some other subject should be insisted upon before admitting a candidate for the LL.B. degree.

Finally, I turn to the cost factor. Some of the changes I have suggested would itself mean a reduction in the wastage which takes place when the facilities which are provided are not fully utilised or when the education which is imparted is of no ultimate use to the student. But I would like to make two other suggestions. There is a fairly heavy outlay on the subsidisation of education. College fees are ridiculously low. With such heavy outlays on subsidisation, there are not enough funds for improving the quality of teaching, getting better teachers and better equipment for the institutions that are set up. I suggest that tuition fees should be raised all round and subsidisation should be done of the poor by giving them scholarships or free studentships, but there is no reason why the children of those who can afford to pay the full fees should be subsidized. It is common knowledge that in many institutions a heavy premium is paid, openly or secretly, as a price for admission, It would be much better to increase the official charges and side by side increase the number of institutions and improve their standards of teaching.

In recent years, many private institutions have come up, which charge a capitation fee. This has given rise to a controversy. In my opinion, it is desirable to attract private money, whether it comes on charitable or commercial considerations, to expand educational facilities and to raise their standards. They should be allowed to charge higher fees than government institutions do. To the extent that they reduce the congestion in government institutions, more seats will become available for poorer children who cannot afford to go to the private institutions. At the same time, institutions which maintain a certain standard of excellence should be called upon to provide seats for meritorious students for whom the State can provide scholarships.

Another suggestion I would make from the resource angle is that we should resist the tendency to insist on an unnecessarily high level of education for all kinds of jobs. I have already talked of dispensing with degrees being treated as the minimum qualification for various purposes. Similar tests should be extended to other areas. Is it really necessary for everyone who wants to become an allopathic doctor to have a degree level education, both in medicine and in surgery? In practice, physicians do not perform any surgery and surgeons do not treat ailments like malaria or dysentery. Another point to consider would be whether for treating the vast majority of ailments, particularly in rural backward areas, it would not be better to have a system of licensed medical practitioners, as used to be there in the past, instead of insisting on only degree holders in medicine and surgery combined to be allowed to practice. Usually, the latter do not go to practise in the villages and a lot of quacks thrive in these areas. Also, many of the health services, such as immunisation, can be rendered by those who have had a limited but specialised training.

Such a fresh look is needed at the syllabus of all other institutions which impart vocational training. In most States, the ITIs train people in only a few trades and produce a surplus of them, while trained personnel for many new services are not available. There has been a tremendous increase in all kind of gadgets and equipments installed both in the household and in the farms and factories. Many of them remain out of order for lack of servicing and repairs. These shortages should be studied and indeed foreseen, while some of the older training courses should be discontinued because they are no longer needed.

Let me now conclude. I have tried to put before you a number of problems in the educational field as I see them. I have also attempted to put forward some thoughts about ways in which they could be solved. My aim has been not to tell those who know better what they should do, but rather to put to this Conference the kind of issues which in my view merit the attention of the experts assembled here. ☐

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ASSOCIATION OF INDIAN UNIVERSITIES
Annual Meeting at NEHU, Shillong

PROGRAMME

Monday, February 25, 1985

		Venue
1000 hrs.	Equivalence Committee (Members only)	Seminar Hall
1200 ,,	Staff Affairs Committee ,,	,,
1300 ,,	Press Conference	,,
1430 ,,	Standing Committee (Members only)	Seminar Hall

Tuesday, February 26, 1985

1100 hrs.	**Inaugural Session** 1. University Song 2. Welcome Address: Dr. B.D. Sharma Vice Chancellor North Eastern Hill University, Shillong. 3. Inaugural Address: Dr. K.C. Pant Union Education Minister 4. Presidential Address: Prof. M.S. Gore Vice Chancellor University of Bombay Bombay. 5. Vote of Thanks: Dr. Jagdish Narain Secretary, AIU 6. National Anthem	
1230 hrs.	Seminar I (National Testing Service)	
1430 ,,	Seminar I (National Testing Service) (Continued)	
1730 ,,	Book Exhibition	Cathedral Hall

Wednesday, February 27, 1985

0830 hrs.	AIU Sub Committee on Deemed Universities (Members only)	Seminar Hall
1000 ,,	Seminar II (UGC Report on Central Universities) (Prof. Rais Ahmed, Vice-Chairman, UGC will preside)	
1430 ,,	AIU General Session	

Thursday, February 28, 1985

0800 hrs.	Visit to Cheerapunji
1500 ,,	AIU Domestic Session (Members only)
1700 ,,	Press Conference

INDIA CHINA UNIVERSITIES FOOTBALL MATCH ON FEBRUARY 12

For the first time in its history, AIU organised an International Universities Football Match in Delhi on February 12, 1985. This match was a part of the next World University Games being held in Kobe, Japan in August-September 1985 and was played between the Universities teams of India and China.

Before the commencement of the match the Chief Guest, Dr. K.C. Pant, Union Education Minister, was introduced to both the teams.

Participating Football teams for the next Universiade have been divided into 4 zones. This match was the first leg of the preliminary round of Group 2 of the Asian Zone. The other zones are Africa, America and Europe. The return match will be played in China at Guanzhou (Canton) on March 10, 1985. The winner of the combined result of both the matches will qualify to go to Kobe to play in the Main Competition. AIU extended local hospitality to the visiting Chinese Universities team which consisted 17 players, 1 leader, 2 coaches, 1 doctor and 1 interpreter. The Indian team consisting of 14 players + 2 coaches arrived in New Delhi on Feb. 8, 1984 from Patiala where they were under training for almos 2½ months.

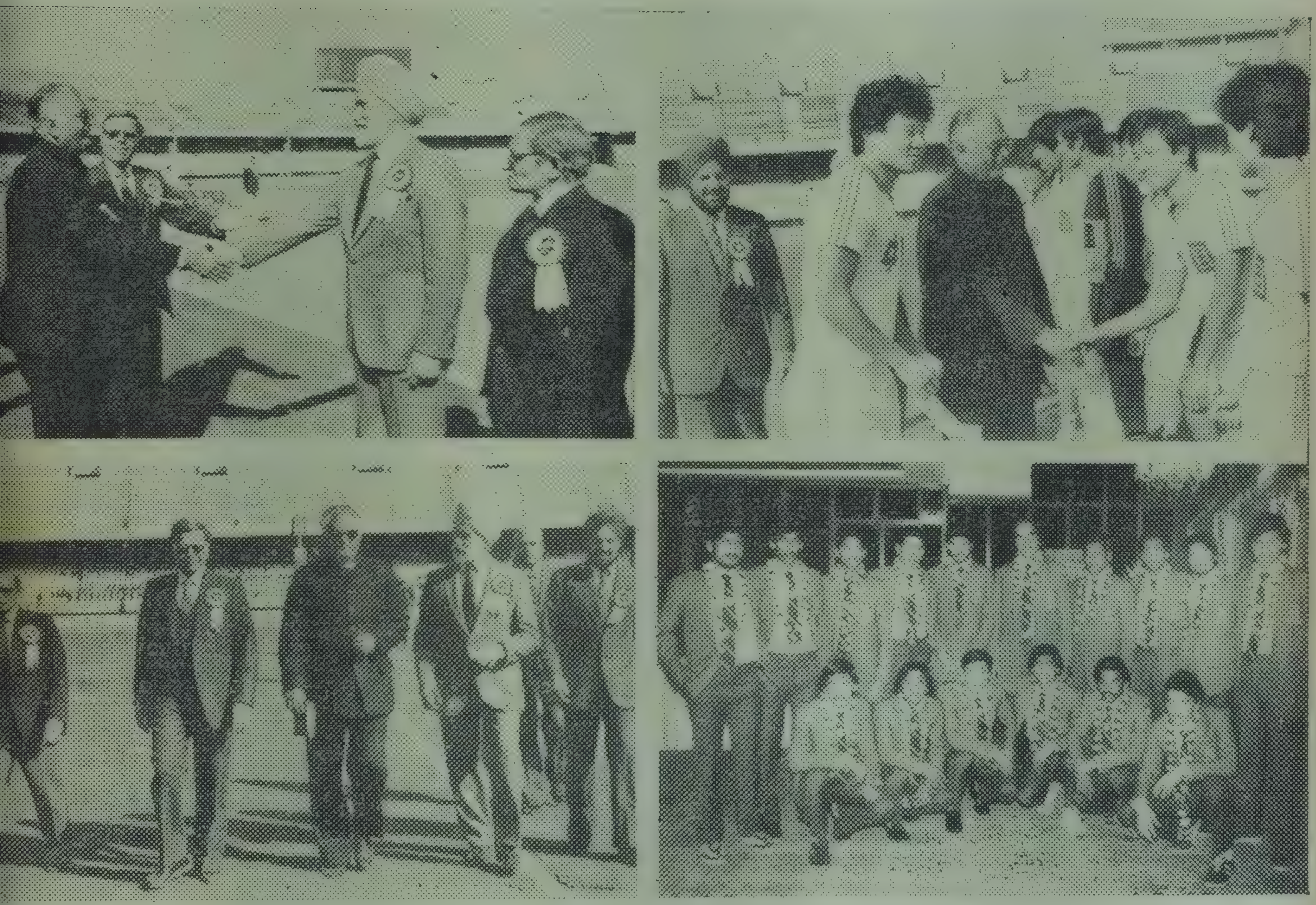
The match was organised in collaboration with the Sports Authority of India. AIU hosted a dinner in honour of both the teams at Hotel Samrat on Feb. 11, 1985. The Sports Authority of India also hosted a dinner to both the teams on Feb. 12, 1985.

An attractive Souvenir was released at the occasion of the match, which was telecast live by Doordarshan. Our team, however, lost to the visiting teams by 7:1. The line up of both the teams was as follows :

CHINA		**INDIA**	
Name	*Position*	*Name*	*Position*
1. Wang Jiefu	Goal Keeper	Aboo Backer Koye C.C.	Goal Keeper
2. Zhu Haibo	Back	Prabir Kumar Das	Back
3. Wang Dongning Capt.	Back	Paramjit Singh Capt.	Back
4. Gao Sheng	Back	Debasis Koner	Back
5. Guo Yijun	Back	Gee Varghese S.	Back
6. Wel Kexing	Half Back	Jagmohan Singh	Half Back
7. Chen Dong	Half Back	Norbert D'Costa	Half Back
8. Jiao Chenben	Half Back	A. Nizar	Half Back
9. Liu Zhong Chang	Forward	Pappachan C.V.	Forward
10. Ma Lin	Forward	Sabyasachi Majumdar	Forward
11. Wu Qunli	Forward	Mushtaq Ali	Forward
RESERVES			
12. Li Zhi Gao	Goal Keeper	Surinder Joshi	Goal Keeper
13. Yin Yi	Back	Santosh Kumar	Half Back
14. Zhang Daming	Half Back	Sammati Saini	Back

INDIA CHINA UNIVERSITIES FOOTBALL MATCH

Jawaharlal Nehru Stadium, New Delhi, February 12, 1985



The Chief Guest, Dr. K.C. Pant, Union Minister for Education, was received by Dr. Jagdish Narain, Secretary, AIU and Major General Narindar Singh, Director General, Sports Authority of India, and introduced to the Indian and Chinese Teams.

Copyright—Some Recent Developments

Abul Hasan*

Copyright protection in India is governed by the Indian Copyright Act, 1957 which was amended twice during the last two years. The first amendment was effected in 1983 with the main objective of meeting our educational requirements and making books available at reasonable prices. The other objectives were safeguarding author's rights and removing administrative draw-backs.

Easy Access to Books

Although India is a signatory to both the International Copyright Conventions, viz. the Berne Convention for the Protection of Literary and Artistic Works of WIPO (1948 Brussels Text) and the Universal Copyright Convention of Unesco (1952), it could not avail itself of the 1971 Paris Revision that provides for certain facilities to the developing countries, without amending its own Act suitably so as to conform to the provisions of the revised conventions. The amendment enables the Government of India to grant compulsory licences for translation and reproduction of works of foreign origin required for purposes of teaching, scholarship and research or for purposes of systematic instructional activities if these rights could not be obtained on freely negotiated terms under conditions enabling their publication or ensuring their availability at prices reasonable in the national context. In other words, if a voluntary licence is not forthcoming in the normal course from the copyright owner of a foreign work, a compulsory licence can be issued :

(1) **In case of translation** : On the expiry of a period of three years from the first publication of a work if it is in a language in general use in one or more developed countries (e.g. English, French Spanish) and on the expiry of one year if the translation is in a language not in general use in any developed country e.g. Indian languages;

(2) **In case of reproduction** : After three years for works of the Natural and Physical Sciences, after seven years for works of fiction, poetry, drama, music and art books, and after five years for all other books, provided, in all cases, the copies are not available in India at reasonable prices.

In either case, the licence will be non-exclusive and for educational purposes only. Besides, subject to certain prescribed manner and reservations attached to these provisions, equitable compensation is to be paid to the copyright owner in convertible currency in conformity with the scale of royalties normally paid for freely negotiated licences in India. Copies of titles produced under compulsory licences are not allowed to be exported normally.

Safeguarding Authors' Rights

The Act did not provide adequate protection to authors' rights. Our authors, generally well-informed, are not always fully aware of the intricacies involved in negotiating the contracts they enter into with publishers. The results is, that they are not always able to realise in full the benefits that arise within their rights.

Hence, a new Section has been added to provide adequate safeguards to authors such as providing for the manner of assignment of copyright from authors to publishers and empowering the Copyright Board to decide disputes arising out of such assignments. Thus, "where any dispute arises with respect to the assignment of, or any of the terms of the assignment of, any copyright, the Copyright Board may, on receipt of a complaint from any of the parties to the dispute and after holding such inquiry as it may deem necessary, pass such orders as it may deem fit, including orders by way of giving permission to the owner of the copyright to revoke its assignment if the terms of the assignment are *harsh* to him or if the publisher unduly delays the publication of the work or by way of issue of a certificate for the recovery of any royalty due to the owner."

There were representations from the publishing industry against the word 'harsh' which seems to have wide connotations and it was feared in certain quarters that its interpretation might lead to a great deal of litigation between authors and publishers. However, it is hoped that the persons of judicial standing such as members of Copyright Board, while interpreting this provision, will consider a given situation in its totality and base their judgement on principles of justice, equity and fair play for both publishers and authors.

Removing Administrative Lacunae

Apart from updating certain provisions the Copyright amendment seeks to rectify certain lacunae and administrative drawbacks that were revealed in the working of the Act. Previously, there was no provision to prescribe the term of Copyright in works owned by corporate bodies. It is now clarified that in the case of a work first published by a public undertaking (a Government organisation or statutory body), the public undertaking shall be the first owner of the Copyright which shall subsist for

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**Deputy Educational Adviser, Department of Culture, Ministry of Education, New Delhi.*

50 years since it is published. A new provision has also been made that all entries in the register of copyrights or any corrections made therein shall be published so that the record of registration would be available to the public. It has also been clarified that the first owner of copyright for any speech delivered in public shall be the person who delivers such speech notwithstanding that he is employed by any other person who arranges such speech or address. Further, the publication of a compilation of addresses or speeches delivered in public cannot be considered a fair deal if published without specific permission of the copyright holder.

Curbing Piracy — The Second Amendment

Close to the heels of the first amendment, the second amendment to the Copyright Act was introduced in 1984 with the main objective of curbing piracy. Owing to the rapid advance of technology, the problem of piracy of books and other materials came to limelight both at national and international forums. As far as books are concerned, piracy in different parts of the world consists of counterfeiting to make quick money and avoid legitimate Government taxes and authors' royalty. In India the kinds of books pirated are popular indigenous books including textbooks, and expensive imported books. Some time fake books are also printed in the name of "ghost authors". According to one estimate, about 400 to 500 titles were pirated every year in India and the loss to Government in tax evasion in each pirated title amounted roughly to Rs. 11,000, besides loss of revenue to the author, artist and designer. Apart from books, piracy was also rampant in audio-visual works like phonograms, films and video cassettes costing still higher losses to Government and artistes.

Deeply concerned about the problem of piracy and the need to reduce its incidence through various measures, the Education Ministry examined the matter in depth in consultation with the concerned Government agencies and various professional organisations and again amended the Indian Copyright Act in 1984 which apart from updating the provisions in the existing law also made its enforcement more effective.

Enhancing Punishment

An important feature of the amendment was to increase the punishment for copyright infringement and enhance penalty on second and subsequent convictions. Thus, instead of the punishment on the first conviction being imprisonment for a term extending to one year, or with fine or with both, the punishment has now being increased to a period of imprisonment for not less than six months and up to three years and to fine of not less than Rs. 50,000 up to Rs. 2 lakhs. In other words, it is now mandatory to impose a minimum imprisonment of six months and a minimum fine of Rs. 50,000 at the time of first conviction. The amendment also provides that if a person has already been convicted on this offence and again commits such offence, he shall be punishable for a second and every subsequent offence with imprisonment for a term which shall not be less than one year but which may extend to three years and with fine which shall not be less than 1 lakh rupees, which may extend to 2 lakh rupees. The Court is, however, authorised to reduce this punishment for adequate and special reasons to be mentioned in the judgement.

Cognizable Offence

Another salient feature of the second amendment is that piracy has now been declared a cognizable and non-bailable offence. This was a departure from a previous prevision under which a police officer not below the rank of a Sub-Inspector could seize infringing copies after the Magistrate had taken cognizance of the offence. The new provisions say that any police officer not below the rank of a Sub-Inspector may, if he is satisfied that an offence in respect of the infringement of copyright in any work has been, is being, or is likely to be, committed, seize without warrant all copies of the work and all plates used for the purpose of making infringing copies of the work, wherever found, and all copies and plates so seized shall as soon as practicable be produced before a magistrate. The question whether copyright infringement, should or should not be made a cognizable offence was again a controversial matter but it was finally decided that making piracy a cognizable offence will help combating this menace. Another provision made in the amendment is to declare the offence of infringement of copyright as an economic offence so that the period of limitation provided in the law will not be applicable to this offence.

The amendments discussed above relate only to written or printed works. It is hoped that the recent changes effected in our copyright law will not only curb evasion of taxation but also help our readers and promote indigenous authorship and the Indian publishing industry. ☐

Formulating a National Book Policy

Amrik Singh*

If we do not have a national policy for books so far, this is more or less in line with our general approach to problems of human development. We do not have a clearly formulated policy in regard to the youth, sports or even education. Most decisions that get taken are ad-hoc in nature. They are usually in response to pressures from various directions and the overall thrust of these decisions is that the immediate issue is taken care of but the overall perspective is always missing.

There is one important difference however. In regard to various other sectors—sports and education for instance—there are vested interests of one kind or another. The general situation being what it is, policy-makers find it difficult to resist them. In the case of books there are hardly any pressures. Nobody is opposed to more books being published and sold. Nobody with any show of reason can say that we should not have more and more of them. All those who are professionally concerned with books—writers, publishers, booksellers, librarians—have the same objective and that is to see that books are made available easily as well as cheaply. There is no conflict or incompatibility amongst the various interests connected with book publishing and book trade. In plain words, there are no vested interests of any kind which would prevent the policy-makers from taking the right decisions.

Myopic Policies

Where then does the difficulty of having a national book policy lie? The answer is simple. Those who are concerned with policy-making have not given due importance to books, libraries, the problems of publishing and the requirements of intellectual life in an integrated manner. Problems are attended to as and when they arise. Some marginal help is also extended to publishing and related activities. But no one has a clear enough perspective of the problems of human development and the role of knowledge in fostering it.

Over the last three decades and more, the country has made a herculian effort in regard to the spread of education. That the results achieved are not entirely satisfactory is another matter. But of this there is no doubt that enormous resources have been invested in spreading education. When it comes to publishing and libraries, the two supporting activities, the effort has been hardly ten percent of what it ought to have been. May be one can say that one important reason why this impressive educational effort has not been as productive as it could have been is the neglect of these two allied activities. To assume that the State has performed its duty when it has established a large number of schools, colleges and universities is to have a very limited notion of what it takes to develop the country.

It is therefore important to recognise the interdependence as well as the mutually supportive role of the various sources of knowledge. Their growth has to be according to an integrated plan. To develop one sector and neglect the other is to weaken the whole edifice. This is precisely what has happened over the years. In consequence, a kind of imbalance has been created. It requires to be redressed now. If that is not done at an early enough date, it will weaken the thrust of the educational endeavour also.

No country can develop till it generates both knowledge and makes it available to all its citizens. When it comes to the generation of knowledge, our attitude is utterly colonial. We feel that we can make do with imported knowledge. That it is becoming increasingly difficult to do so is a separate issue and need not be dealt with here. In any case, beyond a certain stage one cannot import knowledge; nor is it consistent with the dignity of a country like India.

When it comes to the dissemination of knowledge, let us recognise that all these years we have neglected our basic obligation of making it available to every adult. Not only have we neglected adult education, we are not even helping the literates to stay literate. Most of them lapse into illiteracy because books to suit their interests and requirements are not available. As if that was not unforgivable enough, we do not make use of all the modern resources for keeping the citizens abreast of what is happening around them. Books are the most important source for doing that. Those who can read should always have access to books so that if they want they can renew their knowledge. Without a well-developed library system no country can attain this objective. Can we in India follow a path of development which is different from other countries? In every developed country, knowledge is central to its functioning and organisation. So should it be in India.

Need for National Policy

The case for having a national book policy is thus obvious. In addition to what has been said, there are three other important reasons why such a policy should be formulated soon and implemented vigorously. To repeat the first one, in the absence of a strong infrastructure of publishing, libraries and the general availability of books, the quality of education will not improve. These are important inputs and have to be provided in much greater measure than has been done so far. Secondly, it is not the Ministry of Education alone which can formulate or implement

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**Former Secretary, AIU, New Delhi.*

this policy. That requires the active cooperation of a number of other Ministries of the Central Government. Those that have an obvious role to play are the Ministries of Industry (manufacture of paper and printing machinery), Commerce (import policy in relation to books), Finance (credit and other banking facilities), Communications (postal rates), and a couple of others.

Thirdly, though the Central Government can formulate the policy and implement it to some extent, unless State Governments too are actively involved in its implementation, bottlenecks are bound to arise. While formally a concurrent subject, education is to all intents and purposes a State subject. The problems of regional languages can be taken care of only by the State Governments. When it comes to the establishment of libraries and siting of bookshops in suitable areas, the principal responsibility will be that of the States. For this and various other reasons, it is a matter of some significance that whatever policy is formulated, is at least subscribed to, if not actively implemented by the various States.

Fourthly, in order to ensure that the national book policy is implemented effectively, considerable financial support would be required. Funds of the required magnitude can come only from the State, though one must hasten to add that that would be only in the beginning. Eventually, and properly speaking, capital resources would be generated by the ever-widening circle of readers. They would buy books and provide recurrent capital for the industry. But in order to encourage readers to buy books, the intervention of the State is crucial, particularly in the beginning. Our system of education does not foster the reading habit. The reading habit, as is universally known, is formed in the pre-adolescent stage. Availability of the right kind of books for children at that age is therefore a pre-requisite for the reading habit to grow. Another pre-requisite is the easy and cheap availability of books. For the first pre-requisite to be met, the educational policy has to be suitably modified and this cannot be done without the State taking a hand in it. As to the second pre-requisite, establishment of a large number of sale outlets and a network of libraries is important.

Importance of Libraries

The role of the libraries in the building up of a congenial book culture must be understood clearly. Even today, despite the limited library facilities that the country has, it is the libraries which buy the bulk of books sold in the country. (Text books belong to a different category obviously). Strengthening of the library system is thus the key to the development of publishing as an industry. If libraries are starved of funds, as has happened of late, or if the libraries are few in number, as has been the general pattern all these years, it all adds up to one thing : books are not sold because the demand for them is limited. Individuals do buy books but the sum total of what they buy is not more than 10% of the total sales. 90% of the books are sold to libraries, whether they are college or university libraries or public libraries. Public libraries exist only in a few places. Some of the South Indian States, notably Kerala, have done some good pioneering work in this regard. The rest are virtually indifferent to this important public service.

Establishment of libraries should not be regarded as an amenity only. Libraries are in every sense of the word a service to which every literate citizen is entitled. But then we almost live in a semi-literate society. Instead of feeling indignant about it, we tend to accept the situation. One way would be to make the remaining two-thirds also literate. The other is to allow even these one-third to lapse into illiteracy. Sad to say, our policies incline towards the second option rather than the first option.

Even if it is accepted that we must have a national book policy, who is to formulate it and how it is to be implemented? These are important questions and must be answered properly. Perhaps the simplest answer would be to suggest that a statutory body should be established at the Centre. This body should both lay down a policy and ensure its implementation. This body should also be sufficiently high-powered so as to be able to win the cooperation of the states. Without their co-operation, the policy cannot be implemented fully and effectively.

May be the Centre operating on its own can help publishing as an industry. But will the industry rise to its full stature as well as remain viable without the help and collaboration of the States? Unless a net-work of libraries is created all over the country, the gains would be more notional than real. This can be done only when the States are convinced of their usefulness and also find resources for them. The Centre can prompt and prod and to some extent even provide funds but the essential job has to be done by the States themselves and possibly out of their own resources. To leave the States out of reckoning, as is argued by some people, would be to take a short-sighted view of things. Books will be produced and sold only when there is demand for them. The demand is generated at the grassroots level and there the role of the States is crucial, indeed indispensable.

Most people concerned with publishing today talk somewhat nostalgically about the National Book Development Board which functioned somewhat fitfully more than a decade ago. Even when it functioned it had no executive power. All that it did was to provide a useful forum for discussion. But for reasons not stated publicly it has not functioned for almost a decade now. To pine and plead for its revival is an example of timid thinking, if one may say so. What is required today is not an advisory body but an executive body. In our context this would mean a statutory body which has the stature and the resources to formulate a policy as well as to ensure its implementation.

In recent years some people have occasionally talked of a Book Finance Corporation more or less on the lines of the Film Finance Corporation. The idea is sound. Publishing as an industry does require considerable inflow of capital into it. But the question to ask is which of the two—book publishing or book selling—requires to be supported in the first instance. In my opinion, while publishing may receive 50% of this support, 50% of the support should go to the selling of books. This is for the reason that the basic problem with Indian publishing is its inability to sell books. Sale outlets are limited in number and on the whole deficient in capital resources. A book shop has to be both well located and well stocked before it can attract customers. Given the price of books today, even a small bookshop requires a large outlay. Libraries do not pay in time and there is no obligation placed on them to pay in good time. On the one hand this system breeds corruption, on the other hand it impedes the rotation of capital in the book trade.

The need of the hour therefore is to expand and strengthen the book trade. Even a small town should have a bookshop and large sized towns and cities should have a number of them. This would require an input of something like Rs. 40-50 crores spread over the next 4-5 years. If this much capital can be made available to the book trade, publishing would automatically improve. All that the Indian publishers require today is some elementary protection against foreign competition: for the rest they can look after themselves. With more inputs into book selling (and this would include the strengthening of the library system), the publishing industry would begin to perform well. It has done some creditable work in recent years. Within a span of 4-5 years, its export performance can grow from 7 to 50 crores. Once a statutory body with the requisite powers is established, the bottleneck now being encountered will be completely overcome. It is not necessary to have a separate Book Finance Corporation. This function could very properly be performed by the statutory body itself. Indeed to have two separate bodies performing these two functions separately would be both illogical and self-defeating. The correct thing would be to make the statutory body as high-powered as possible. Perhaps it would not be a bad idea to bring bodies like the National Book Trust, Raja Ram Mohan Roy Foundation and the Publications Division also under its purview.

Two other inter-related aspects of the issue may also be referred to here. One is in relation to the needs and requirements of publishing in regional languages. Secondly, in order to understand this issue it is important to analyse what the State has done so far in this regard.

Most of what is stated here is from the urban point of view and indeed with its accent on English publishing in India. These reasons however should not be regarded as decisive enough to dismiss the argument out of hand. India is the third largest publisher of books in English in the world. What is being done in this area today is not inconsequential therefore, particularly from the export angle. Furthermore, the problems of regional publishing are basically not different in character from what has been discussed here. Regional publishers too are starved of capital and they too find it difficult to reach the readers. In a sense their situation is worse. In towns and cities there are some sale outlets and a few libraries. In the countryside these are altogether absent. What they need therefore is much greater help form the State than is visualised here.

One problem is particularly prominent in the countryside. A large number of adults lapse into illiteracy because suitable literature is not available to them. In particular, it is the literature of knowledge which is not available to them. If for instance a farmer wants some elementary knowledge, say, about bees, it would be difficult to assert that every Indian language would have something available on the subject and at the level at which he requires. Most Indian languages are languishing because enough literature of knowledge is not being produced in them. Imaginative literature has been certainly produced which is what keeps the languages alive. But what is required is growth in the literature of knowledge so that those who are engaged in productive work can, if they wish to, increase their knowledge and their productivity. Hardly any attention is being paid to this problem.

One important reason for this particular form of neglect is the way the State has gone about promoting the development of Indian languages. Most of this effort has gone waste for the simple reason that the mechanism adopted has been bureaucratic and unimaginative in character. Governmental procedures are not attuned to so unique an activity as the production and distribution of knowledge. Every book is an independent entity. In that sense it is different from every other book. Every book has consequently to be dealt with as a unique product. It is unique in terms of its writing, editing, production as well as its distribution. For this reason the procedures that would work elsewhere would not work here.

The difficulty about procedures operates not only in respect of the writing and the production of books but also in respect of the failure to ensure that the funds invested are put to proper use. Millions have been sunk into helping the Indian languages to grow. There has been some growth no doubt but most definitely not in proportion to the funds invested. What is to be done in this situation? The short answer is that, whether one likes it or not, publishing is one activity where the commanding heights would be willy nilly controlled by the private sector. □

Is Financing Indian Higher Education Equitable ?

C.B. Padmanabhan*

Problem in financing education in India or in any other country should not be regarded only as one of finding adequate resources nor should the study and research on educational finance should be regarded as exercises in statistical analysis or of data collection, storage or their analysis. Undoubtedly they are important and particularly there has to be more timely publication and greater indepth analysis of financial data as well as their use in planning. In fact the analysis and availability of financial data are major pre-requisites for the application in any kind of managerial techniques like budgeting or PERT to educational administration in India.

Countries of the world devote different shares of their resources to education and so also the governments devote different shares of their resources to education. For example, it is now well known that developed countries spend more than 7 or 8% of their national income on education—even though both their national income (or per capita income) and their education are developed—while developing countries like India are able to devote only 3.1% of their national income to education. Within education also there are priorities which differ from country to country and within India from state to state. The total resources devoted by different states of India for education are also different as indicated by the share of their budget in the government to education. For example, on an average in 1980-81 the revenue budgets of the state governments devoted 25.5% to education while certain states like Kerala devote nearly 40%.

How such allocations are determined? Are they only due to changes in their ability or effort to finance education or are they able to follow any rational economic criterion? In fact are their rational economic criterion available at all for determining the allocation of resources to education? It should be stated at the outset that the educational financing policies of every state in India or the country as a whole or for that matter any country reflect the value choices of the people, the order of priorities which they establish in the allocation of their resources, the strategy for the development they follow and their political philosophy. A well known economist of education dealing with financing of education regards the factors that influence allocation of resources to education as so important for a country that he states that "a treatise on the social, economic, political and religious history of U.S.A. could be centered around the history of financing of US/Govt High Schools" (Roe L. Johns, in a Horace Mann Lecture in US). One can certainly see the evidence of the influences of many of these historical, political and religious factors in the allocation of resources to education, for example, states like Kerala, where it is due to a consideration of historical factors, the allocation to education by the Government has been quite high and even now it continues to remain so, though certain union territories of India have followed suit, of course for a different set of reasons.

In order that sound politics of financing of higher education or for that matter any level of education are adopted it is necessary to have adequate and widespread understanding and a good deal of public debate connected with financing of Indian higher education, how well a system of financing has been functioning in terms of achieving the objectives of equality of opportunity or providing good quality education etc. In short, we should know how well the financing mechanism is functioning as a policy tool so that alternative techniques are designed. At the present moment, the debate relates only to whether subsidy should be there or not. But this is only in the realm of general statement. There is necessity for considering what should be the amount of subsidy and which sector of education should get it and whether students should get it or those who are organising and administering the institution should get it. The following paragraphs are addressed to this set of concerns in the field of financing higher education in India. As an essential preliminary the present situation is reviewed.

The Present Situation

In 1981-82 there were 118 universities and 13 institutions deemed to be universities, 4886 colleges, and had a total enrolment of 29,52,006 students. Between 1977-78 and 1981-82 the number of colleges increased by 511 with the following break up among different states of India, which accounted for nearly 84% of the increase in the number of colleges in the five-year period:

Bihar	99
Karnataka	83
Andhra Pradesh	77
Maharashtra	40
Orissa	29
Uttar Pradesh	26
West Bengal	26
Kerala	25
Rajasthan	22

Dr. C.B. Padmanabhan is Senior Fellow and Head, Educational Finance Unit, National Institute of Educational Planning and Administration, New Delhi. The views are personal to the author.

The break up of number of colleges by management is not readily available. It will be worthwhile if the Annual Report of UGC presented to Parliament every year gives this extremely useful additional information for policy purposes. Of course, this will be readily available with UGC, but publication of this information along with the way in which these institutions are financed and funds released to them by the Government—Central and States—will generate the debate and focus attention on some important issues relating to financing of education at the higher level. For example, the annual publication of the Ministry of Education for 1977-78 has given the information that there were 517 government colleges, 28 local bodies managed colleges, 163 university colleges and 2264 private aided ones making up a total of 3229 arts, science and commerce degree giving colleges for general education and another 464 intermediate pre-degree colleges, of which 221 government, 1 university and 234 privately managed colleges. It would be interesting to speculate as to why such private colleges have come into being and what are the sources of their income and what is the effectiveness of the activities that are carried on by such institutions? Of course it is also necessary to find out what share of government finances is going to them and what is the effectiveness of the use of such finances. States differ in regard to the number of private aided colleges; Maharashtra, Uttar Pradesh and Karnataka are in forefront.

Distinction between administration and financing

One cannot say that there will be correspondence between the number of private or aided colleges and share of non-governmental sector in financing higher education because such private colleges are not completely privately financed and they do receive government aid—may be as salaries for teachers and grants for other activities in the colleges. Also the students studying in such colleges may be receiving government scholarships or freeships. It is necessary to distinguish between administration and financing of institutions, private institutions are mixed in terms of sources of their income and financing. Of course, the Government institutions are also mixed in terms of their sources of financing because they may be receiving fees from students, though it is well known that such levels of fees are low and need to be revised upwards provided no untoward consequences will follow in the form of further widening of the inequality of opportunity for SCs and women. When one considers the financing from the government or the private sources, in addition to its adequacy one has also to consider its usefulness as a tool for equality of opportunity among different socio-economic groups of the population or different parts of the country like rural and urban. It is this aspect of financing arrangements for institutions which are not receiving adequate attention in our country and which has to be debated in public to a much wider extent than is being done at present. In fact it is necessary to realise that there are a number of possible financing forms for higher education or other levels of education which could be adopted in our country but which have not been experimented with so far. It is also essential to emphasise that "financing methods influence both the volume and composition of educational activity. In some cases the effect may be small, in other substantial, only rarely well it be the case that financing methods are neutral in their effects." (p. 213 in Economic Dimensions in Education by Morlin O'Dognghue)

What inferences can we draw from the available published information at the macro level in regard to equality and financing higher education? The total expenditure on all levels of education in 1975-76—the latest year for which the information is readily available—was financed from Government funds, local bodies funds, university funds, fees and endowments and other sources. The total direct expenditure on higher education has increased from Rs. 645,52,015 to 1756,38,5481 between 1950-51 and 1975-76. This expenditure has been financed from the above five sources. In the period 1950-51 to 1967-68 the contribution from each source of financing for universities has grown at 11.6% from government funds, 19.7% from local bodies, 12.2% from fees and 12,9% from other sources, and the total expenditure has grown up at 14.6% for universities, for colleges of arts, science and the contribution from government funds has grown at 13.7% from local bodies 12% p.a., from fees 11.9% p.a. and from other sources 13.6%. Thus the total expenditure on arts and science colleges has grown at 12.8% p.a. It is worthwhile noticing that the contribution from the fees has been going down as a percentage to total expenditure in the period after the seventies. Is this the right thing to happen from the point of view of equality of opportunity and financing of Indian education? There is undoubtedly a case for raising more resources from such internal resources as fee and what community can contribute for higher education. At present the increasing share of expenditure of education is being financed by the Government. Actual expenditure in 1980-81 for university education was Rs. 384.90 crores which includes 43.13 crores for plan, and 341.77 crores for non-plan, making up 12.2% of the total expenditure incurred by education departments of all states and union territories. The budget estimates for 1982-83 for university education was 648.12 crores being 15% of the total budget. The higher percentage of the budget expenditure devoted to university education was by the Andhra Pradesh Government being 19.6% and Sikkim was the lowest with 2.6%.

The government expenditure on university education as we have already pointed out above is only part because there is also the expenditure incurred by the non-governmental sector which will include those persons or organisations or societies, which are running private colleges. On these colleges and the expenditure incurred by the families or households from where students are studying in the various colleges. At the present moment, the information on total expenditure collected, compiled and published by the Government of India through the Ministry of Education contains information only on the institutional expenditure i.e. expenditures incurred by the institutions themselves on them. This is done through the Form A or Form B and this contains information on expenditure incurred by the institutions as well as by the students as fees only. Evidently, this excludes a lot of items of expenditure incurred on administration of these institutions as well as other items of expenditure incurred by the household on the education of their wards.

Thus there is a very important lacuna in the financial statistics—apart from its timely non-availability—in regard to the total items of expendrture which includes government expenditure as well as private expenditure incurred on education by different families. In fact, if we have to judge the efficiency of financing mechanism as a tool for policy objectives, it is necessary to look at the sources of financing as the economic sectors, namely, governmental sector, the household sector, which incurs private expenditure, the industrial sector, the agricultural sector, as well as other sectors of the economy like the service sector. In a dynamic sense, if education is to be viewed as an input for contributing to the growth of production then it is necessary to identify in a sectoral way the manner in which the educational and training activitiesare carried on the organised in each sector and if we have to find out whether additional resources can be mobilised, it is necessary to consider from which sector resources can be mobilised without affecting equality of opportunity or quality of education.

If we look at the present situation regarding financing and costing of higher education in India, it is found that we are spending much less than any other developed countries which spend a larger percentage of their resources to education. If we look at per student expenditure we are spending less than many other countries of the world. The published information relates only to the government expenditure and therefore one cannot accurately use per student expenditure as an indicator of the quality of Indian higher education. Unlike in the case of primary education, where per student cost is very low when compared with many countries of the world and there is very urgent and imperative need for improving the situation by spending more money per student. But in regard to higher education it has been found that there are many colleges which are having high per student cost not because the quality of their performance is high but because of the low enrolment arising out of any absence of planning for location of these colleges. Therefore, the answer is better planning in the field of higher education as a whole. In this respect, the financing also will have to go together with planning. Even at the stage of planning there has to be a carefully formulation of financial implications of the programs in higher education and certain mobilisation targets also will have to be broadly indicated for different regions in the country or sectors of the economy. The question of how Indian higher education should be financed and what should be the balance between public and private contributions raises a number of issues. For example, what level and form should public subsidy this should be considered that different courses of study, depending upon their growth of the economy or pushing frontiers of knowledge further. Whether the financial assistance be given directly to institutions of higher education to include them to reduce or abolish fees or to students to enable them to pay fees. Should public subsidies for higher education be financed out of general taxation or out of the profits that industries or agriculture are able to make?

Is the total amount of expenditure on scholarship spent in the budget of every government adequate? The actual amount of scholarships per student and number of scholarships—is this the right amount particularly for scheduled castes and scheduled tribes and girls in states and urban areas? The Education Commission of India has suggested conducting of survey periodically in order to assess the actual private expenditure and determine the amount of scholarship. But at the present moment due to the arbitrary decision on the amount of scholarship for scheduled castes there are heavy drop outs as is indicated by a recent study (Professor Suma Chatnis, Scholarships for SCs/STs and Girl students in Colleges of Bombay).

Lastly, there has to be a greater concern with the factors that influence the demand for higher education in different kinds of households or by patterns of different occupations or in different regions. What has been happening in India is a very high growth rate of demand for higher education and a better knowledge of the factors influencing private demand for higher education is very imperative? Even a country like Japan is very much concerned with absence of equality of opportunity in that country's higher education. In Japan 40% of the relative age group are able to attend institutions of higher education and therefore it cannot be called an elitist system and yet Japan feels that expansion of opportunities has not been felt evenly throughout the Japan in society and therefore various measures incurred to financing of higher education and ascertaining the demand for higher education have been adopted. These indeed are a lesson for a country like India where a much smaller percentage of the relative age group are able to attend and take above facilities for higher education. Therefore there is imperative need for financial measures which will serve to equalise educational opportunity in higher education in India. ☐

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Science & Technology Promotion Programmes of Department of Science & Technology

Introduction

A principal activity of the Department of Science and Technology (DST) is the coordination and promotion of S&T activities in several frontier and newly emerging areas of science and technology. This is done through several programmes/schemes implemented in a coordinised manner by the Science & Technology Promotion (STP) Division of DST. The salient features of the programme operated by STP Division are given below. Scientists and engineers are invited to make full use of the opportunities being provided under these pragrammes....

1. SERC & GRC Schemes for Research Support

The Science & Engineering Research Council (SERC) scheme and the General Research Scheme (GRS) of the department support time bound research projects usually of three years duration in areas which normally do not come under the direct purview of agencies like ICAR, ICMR, UGC, CSIR, etc., and Departments like Atomic Energy, Electronics, Environment, Ocean Development and Space. The objectives of the SERC and GRS schemes are....

(1) SERC: To support frontline research in emerging areas of science and engineering and in interdisciplinary fields. Research programme should be capable of making a significant impact on the scientific scene.

(2) GRS: To provide general research support to scientists on broad basis irrespective of institutions or areas of work so that they would not have to look for assistance from abroad, particularly under specific foreign currency programmes.

2. Thrust Area Programmes (TAPs)

The SERC scheme also encourages research in the identified Thrust Areas through a support mechanism which is more flexible and comprehensive than the one followed for individual research projects. New activities to be supported in Thrust Areas are:

(i) Coordinated research through Thrust Area Programme (TAP)
(ii) Setting up of Research Core Groups or Units
(iii) Training Programmes in identified areas of research, involving Young Seientists
(iv) Setting up of Support Facilities for research.

TAPs include major research programmes to be undertaken by Indian Scientists from different institutions in a coordinated manner, to enable the creating of a significant impact on the Scientific Scene.

**Note: Thrust Area Booklets in Life, Chemical, Physical & Engineering Sciences are separately available.

3. Intensification of Research in High Priority Areas (IRHPA)

This scheme is designed to provide a major conscious support to a few areas of research that have high priority from the viewpoint of advances in fundamental science or can be of great significance for national development. Intensive research in such areas of high priority is promoted by the following mechanism:

(a) Building up of a core group around highly competent Scientist.

(b) Supporting major national R&D programmes involving several institutions and agencies.

(c) By establishing specialised facilities critically required for carrying out research in high priority areas at the national level.

The mechanism of funding under IRHPA is closely related to SERC.

4. Promotion of Scientific Interest in Youth

To encourage involvement of young scientists (approximately 18-35 years age group) in the national S&T development process and to promote their interest in science, the following activities are supported under the Scheme:

(1) Small research and development projects and feasibility studies to promote scientific interest in youth.

(2) Organisation of seminars/symposia on subjects relevant to the promotion and encouragement of scientific interest in youth.

(3) Travel grants to young scientists for attending Training Courses, Summer/Winter Schools in India and abroad.

(4) Publications aimed at promoting scientific interest in youth.

5. Assistance to Professional Bodies and Science Academies

The DST has so far been providing limited support to the professional bodies in the field of Science & Technology and to Science Academies (hereafter called societies). A new scheme has been drawn up for specific provision of financial support to the societies in a manner which will enable these

to take on the extended responsibilities of creating a cohesive integrated scientific community through arranging regular meetings and conferences, publishing high quality journals, encouraging meaningful discussions, organising Science exhibitions etc. in a coordinated manner.

6. Support for Seminars & Symposia in Science & Technology

Financial support under the Scheme is provided for organising Conferences and Seminars as well as for publishing their proceedings.

7. Partial Financial Support for Participation in International Conferences

Partial Financial Assistance towards travel is provided to Scientists for atttending international Conferences/Seminars/Workshops etc. The scientists should have an accepted paper for oral presentation in the Conference and/or an invitation to deliver a talk. The Indian National Science Academy (INSA) is already providing such support for Conferences sponsored by International Council of Scientific Unions (ICSU); the support from DST is therefore restricted to only non-ICSU conferences.

8. Futures Research

The objectives of the scheme are to promote research studies on quantitative modelling on various economic and commodity sectors, to examine existing ones and new policy instruments needed in future to foster economic growth through applications of S&T, and also to generate, through seminars and workshops, awareness to application of anticipatory techniques.

9. Scheme for Development of Scheduled Castes and Scheduled Tribes in Science & Technology Areas

This scheme is for the promotion of Technology for occupations engaging Scheduled Castes, Scheduled Tribes, landless labour and linked occupations. It focusses attention on an area of work requiring a special effort not available under the existing ongoing schemes. In particular, under this Scheme, it is proposed to support specific surveys to identify areas and the required technologies, formulate and implement projects to generate the same and promote programmes for field applications and proto-type development.

10. Science & Technology for Women

This Scheme has two major aspects....first relates to the role of Science and Technology in improving the life, working conditions and opportunities for gainful employment for women and the second to the contribution that women can make to the development of S&T and its application.

Under the scheme, it is proposed to formulate an All India Coordinated Project on Development of Technologies to benefit women in general (in reducing drudgery, increasing productivity in their areas of work, opening up of new vocations for them etc.).

11. State Councils on Science & Technology

This Scheme was initiated to catalyse the setting up of State Councils on Science & Technology. The main role of these Councils is to act as focal points in the States for Planning, Coordinating, promoting S&T activities within the State.

12. Regional Sophisticated Instrumentation Centres (RSICs)

The RSICs provide sophisticated instrument & equipment facilities to scientists from educational institutions, R&D Laboratories and industry on nominal charges. Scientists & Engineers are requested to make full use of these opportunities being provided under the DST programmes for S&T promotion.

Seven such centres have been established and are operational at:

(1) Indian Institute of Technology, Bombay
(2) Indian Institute of Technology, Madras
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S.K. Bhatia*

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A book cannot be said to be published till it reaches in the hand of the readers, and it is possible only through a systematic distribution channels. The normal channels are Publishers—Distributor/Wholesaler—Bookseller—Reader.

The distribution system does not really work in India as almost all booksellers are Publishers as well. In all other countries all of them have a different role to play and that is the reason for low sales in India. All publishers since they are booksellers also try to approach the customers directly, thus bye-passing the rights of distributor/wholesaler. Distribution of Indian books as rather a difficult job. Today there is only one distributor for purely Indian Publications and that is D.K. Publishers' Distributors, New Delhi. But they too have their own limitations.

There are several other wholesalers like UBS Publishers' Distributors, Allied Publishers' Pvt. Ltd., Jaico Book Distributors, India Book House, Prakash Book Depot, Variety Book Depot, who sell Indian as well as Foreign Books.

A wholesaler endeavours to buy books from the Publisher at maximum discounts and sells to retail booksellers at lesser discounts which may be based on the number of assorted titles ordered at one time or the number of copies of each title. A wholesaler offers free delivery and fast service to his customers. A wholesaler allows the same discount to the bookseller which he would have got from the Publisher. Wholesaler stocks all titles of Publishers stocked by them. A wholesaler offers the advantage of payment with a single cheque at the end of the month and saves booksellers the necessity of searching out small publishers. Retail booksellers are inclined to rely on a wholesaler for hard to locate titles, or books from little known or remotely located small publishers.

The publishers have also advantages of appointing distributors i.e. less accounts, phone calls etc., thus the publishers can concentrate more on promotion of books than sales.

In India publishers hardly do promotion of their titles. They expect the distributor to do all that is required to be done by them. My own view is that Publishers treat their work like a dead body and remove it from binders' place directly to distributor without giving time to the distributor for even creating market for those books. The covers or jackets, which are the most important sales tools are either never given or given after the books has been released in the market. Therefore, the publishers are advised to give publicity material much in advance to enable the distributor to plan sales.

Whereas the Publisher gives books on firm sales to the distributor the bookseller accepts it only on sale and return basis, thus the distributor is always under the pressure of both Publisher and a retailer. The booksellers baring a few, never pay to the distributor in time whereas the distributor pays in time to the Publisher. Since, the margins of a distributor are low, no newcomer tries to enter into the field. The older ones are there because of their helplessness as they do not divert to any other field although, there is still need for a nationwide good wholesaler.

**Manager, D.K. Publishers Distributors, New Delhi,*

UNIVERSITY NEWS

University News is published weekly by the Association of Indian Universities to promote awareness of contemporary thinking on higher education. Views expressed in the journal are those of the authors and do not reflect the policies of the Association.

Articles are invited by the Editor on matters relating to University education. Manuscripts (in duplicate) should be sent to Editor, University News, Association of Indian Universities, AIU House, 16 Kotla Marg, New Delhi-110002. They should be typed on one side of the paper, double spaced with wide margins. Each article should be accompanied by a summary/abstract of 100/150 words on a separate sheet.

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Fifteen Years of HAU

Haryana Agricultural University completed 15 years of its independent existence on February 2, 1985. The Vice-Chancellor of the University issued a press statement outlining some of the significant achievements of the University during this period.

Haryana Agricultural University completes fifteen years of its independent existence on 2 February 1985. During this period the University has emerged as one of the leading universities in the country in terms of research accomplishments, extension education, contribution to agricultural education and the facilities built up.

We would need to reappraise the accomplishments made in these years, and particularly so, in the recent past.

The significant achievements or research in crop science has been the release of seven crop varieties at the state level. These are WH-283 and WH-291 of wheat, BH-75 of barley, RH-30 of raya, H-75-35 (Gaurav) of gram and S-9 and K-851 of moong. The wheat variety WH-283 is expected to replace HD-2009 and WH-157 and WH-291 may replace sonalika for late sown conditions in the State. Raya RH-30 is suitable for mixed cropping and barley B-75 is expected to replace PG-25 under semi-irrigated conditions. Gram variety 'Gaurav' is a bold seeded, high yielding genotype that withstands grey mould and ascochyta blight. Moong S-9 is suitable for rainfed areas and K-851 is recommended both for summer and kharif seasons under irrigated conditions.

Further Desi cotton variety DS-1, bajra hybrid HHB-45, HHB-46, Bajra composite HC-4, maize ageti-76, moong MH-309 urd UH-80-7, soyabean HM-1, senji HFWS-55, metha HFM-65 and guar HG-72 were identified. The proposals for their release are being submitted to the State Varietal Release Committee.

The University produced vegetable seeds worth Rs. 4.6 lacs and 82,000 quality fruit nursery plants of ber, guava, grape, peaches, citrus, pomegranete etc; 2654 qtls breeder seed and 3370 qtls foundation seed of improved varieties and supplied to various central, state seed multiplying agencies, during last one year. 18557 qtls. of hot air tested disease free sets of sugarcane varieties COJ-64, CO-7314, CO-7717 and CO-1158 were also supplied to State Sugarcane Mills at Yamunanagar, Karnal, Panipat, Sonipat, Rohtak and Palwal.

In the field of veterinary science, glanders, deadly disease of horses which is also communicable to man, is reported to be present in Haryana. It is being tackled in cooperation with the State Animal Husbandry Department and with the remount veterinary services. The cases were detected in and around Hissar, Rohtak, Karnal, Delhi and Gurgaon.

Foot and mouth disease outbreaks have been detected throughout Haryana and appropriate measures have been taken for its control.

Active collaboration with the army establishment is being maintained for the control of equine diseases. The investigations on these diseases, led to significant reduction in abortions in different state farms of the country.

Efforts have been made to evolve economically viable strains of various species of livestock and poultry. The half bred friesians produced maximum quantity of milk while the lowest age of maturity was recorded in FJH and JFH (The threbred courses).

Cross breeding of nali sheep with exotic breeds indicated that the genetic groups having 75% exotic inheritance were comparable in wool quality and showed improvement in average fibre diameter and modullation per cent.

Extension programmes have been geared to serve the farmers, more than ninety-seven thousand farmers were advised through farm and home visits, about one thousand through correspondence and about 25 thousand through office calls by the Directorate of Extension Education.

For rapid improvement of agricultural technology amongst scheduled castes and other backward communities a special project was initiated in district Gurgaon under which five villages were adopted. Technology in the field of crop production, animal husbandry, home science was provided in these villages.

The postgraduate programme, which is being offered in 39 disciplines of various constituent colleges of this University, also included the subjects of agricultural meteorology, chemistry and veterinary immunology which were added during the year 1984-85.

The Department of Foods and Nutrition started its Ph.D. programme. One hundred nutritious recipes based on locally available foods in Haryana have been standardised.

In the College of Basic Sciences, almost all the data analysis work of the students and staff members was handled at the computer centre. A programme library consisting of 40 programmes has been developed. Now any data generated by the scientists and students can be computerised for appropriate statistical analysis.

The college has done outstanding work at the national level in tissue culture. Plants of female date palm from leaf explants through tissue culture techniques have been developed.

In the area of sports, the University Athletic team participated in the All-India YMCA Athletic Meet, held in October 84 and won 2 silver medals in high jump with a new record by Sh. Vijay Pal, 2 gold medals in pole vault and high jump with a new record by Vijay Pal Singh, and 2 silver medals in discuss throw by Sh. Roop Singh, College of Sports.

The Athletic team also participated in the All-India Inter-University Athletic Meet, held at Gwalior from 29.1.1984 to 1.1.1985. Sh. Vijay Pal Singh, a student of College of Sports won 2 gold medals. He has been selected for coaching camp for World University Side Games.

The University boxing team participated in All-India Inter-Varsity boxing championship held at HAU, Hissar from 8.1.1985 to 11-1-1985 and won the championship by winning 3 gold and one silver medals.

During the recent past we have initiated a process aimed at improving the general tenor of administration teaching, research and extension education. Concerted efforts have been made to improve upon the teaching standards and accelerate the pace of research. As a result, the University has attracted meritorious students for admission to different colleges. In order that the best available talent gets recruited to the faculty, system of recruitment has been streamlined and made merit oriented. Systems have been developed to identify those who work hard and produce better results. In short, our efforts have been directed towards improving the quality of our education, research and extension programmes so that the State should not only maintain its present pace of development and growth but also give further lead to the country in this direction.

Panjab Varsity Organises International Symposium

The Department of Chemical Engineering and Technology, Panjab University, Chandigarh, organised an International Symposium on "Economic Evaluation and Project Management of Process Plants" from 21st to 24th January, 1985. About one hundred persons including experts from the industry, consultancy firms, financial institutions, and academic profession participated. Dr. S. Vardharajan, Director General, Council of Scientific & Industrial Research, inaugurated the symposium, and Sh. T.K.A. Nair, formerly Secretary, Department of Industries, Punjab, and Chairman, Punjab State Industrial Development Corporation and currently Chairman, The Marine Products Export Development Authority, Cochin, delivered the plenary lecture. Professor J.C. Bansal directed the symposium which was sponsored by the University Grants Commission.

Dr. Vardharajan, in his inaugural address, referred to the recent Bhopal tragedy and emphasised that in any industrial project due importance should be given to the safety aspects. Many chemical processes involve handling of hazardous materials which may cause fire and explosion, or produce toxic emissions, destroy human life and property, and pollute the environment. Project engineers should pay due attention to these aspects while planning, designing and implementing a project.

In each technical session a particular aspect of project management was highlighted. Questions like how to evaluate the viability of a project, how to mobilise financial resources, how to identify suitable vendors and contractors and monitor the schedule for project implementation, etc., were thoroughly discussed. A process plant requires a number of off-site facilities for supply of water, steam, compressed air etc., before it can be commissioned. How and when to establish these facilities were also considered. Procedures and problems concerned with commissioning a plant and making performance test-runs were also elaborated, and safety and environmental aspects were duly considered. To keep a plant up-to-date and competitive, it is necessary to revamp it at periodic intervals. Some case histories of revamping operations were cited and analysed. Experts also talked about prospects and problems of project management in the Middle East by Indian entrepreneurs and consultants, and discussed how to develop better project engineers for our industries.

In view of the importance of the topics discussed during the symposium, the Department of Science & Technology and the Council of Scientific & Industrial Research, have agreed to give liberal grants for publication of the proceedings of the symposium.

Based on the deliberations of the symposium the following recommendations were made :

(1) A reliable data bank should be established in India for proper estimation of costs. Information available with various government and private organisations should be mobilized for this purpose.

(2) "Project Management" should find a proper place in the undergraduate engineering curriculum and also a postgraduate diploma course should be instituted.

(3) Safety and environmental aspects of a project should be properly emphasised in the engineering curriculum.

(4) Governmental procedures should be simplified in order to facilitate project implementation.

Poona Varsity Seminar on New Trends in Management of Libraries

A National Seminar on New Trends in Management of Libraries was held at the University of Poona from 19th to 22nd December 1984. The Seminar was sponsored by the University Grants Commission and organised by the University Department of Library and Information Science.

Because of the literature growth, increased R&D activity and growing interdisciplinary approach in study and research, pressures on library and information services have increased. The general concern of libraries is to increase the quantum and quality of their services at the existing costs or provide the existing services at the decreased cost. The objective of the Seminar was therefore to examine the various management problems faced by libraries and to find ways and means to achieve the optimization of services.

There were 21 outstation and 15 local participants in the Seminar. Additionally, there were 30 observers from the special libraries in the neighbourhood. The participants represented University libraries and departments of library and information science, CSIR laboratories, ICAR and ICMR institutes, DRDO establishments, BARC, DRTC, INSDOC, IIT, Bombay and British Council Library, Western Region. Discussions were held in six sessions : Principles of Librarianship, Collection Management, Reader Services, Financial Management, Personnel Management and Technology and Efficiency. In all, 24 papers were read at the Seminar covering the specific aspects of library management such as:

Self renewal policy : weeding out; microform versions as an alternative to physical growth; serials management; document supply systems: networks ; cost effectiveness, unit costs; PPBS, ZBB and libraries; staff as a team; technology; library automation, computerised data bases.

The concept of self renewing libraries is fast catching up in India and a consensus reached in the Seminar was that even university libraries should not fight shy of adopting the self renewal policy and that each library should now formulate its own weeding out policy statement so that the effort spent on the up-keep of unused and seldom-used material could be directed at more meaningful tasks.

The seminar also showed a greater awareness of the place microforms have in collection management, more particularly when space is becoming scarcer. More and more journals are likely to be available in microform version and libraries should be psychologically and culturally prepared to accept them in place of hard copies. The seminar felt the need for creating document supply facilities, as mere bibliographic access was not enough. There was a strong feeling among the participants that a collection of core journals in Science and Technology should be developed at the National Science Library as early as possible.

The Seminar discussed the modern techniques of budgeting such as PPBS and ZBB and their relevance to the financial management of libraries. For arriving at unit costs, the seminar felt that it was first necessary to determine work units of each process and standard times required for completing them and, for this, work studies should be undertaken in each different type of library.

About the staff, which is expected to work as a team, the seminar was generally of the view that a proper work environment should first be created where equal opportunities for rise on the basis of merit and assessment were available to all. It was only in such an environment that appeal to creativity and innovation was favourably responded. Selection and recruitment in Indian libraries suffered for want of proper job analysis and job requirement. Librarians must therefore undertake job analyses in order to improve their services.

Reprographics, micrographics and computerization were three specific areas of technological application in library and information services. Reprographics had facilitated document delivery while at the same time ensuring availability of the original in the library; micro-graphics had provided answer to growing space requirement and minimized the storage problem and the computer had enlarged and quickened bibliographic access, relieved the staff of the drudgery and brought about standardization of library processes. Its capabilities have created the possibility of providing several supplementary services. Librarians can no longer turn their back to these potentials of technology. The seminar provided encouragement to mechanization of libraries and suggested means to train library and information science teachers on the one hand and library personnel on the other hand in technological applications for more effective and efficient library and information services.

The Seminar was inaugurated by Dr. V.A. Kamath, formerly Head, Library and Information Services, Bhabha Atomic Research Centre and now Honorary Adviser and Chairman, Nehru Centre, Bombay. Dr. Kamath, in his inaugural address, observed that India is still behind in sophisticated library service and though paperless information systems are likely to be operational before the end of this century in the United States, it will not be that soon in India.

Dr. V.G. Bhide, Vice-Chancellor, University of Poona, who presided over the inaugural function, cautioned the participants, in his presidential address, that all innovations in library and information services, however welcome they might be, should be accepted and introduced to suit the Indian environment. The librarians, Dr. Bhide said, should not lose sight of the Indian context.

Shri M.R. Riswadkar, Reader in the Department of Library and Information Service, was Director of the Seminar. Dr. S.G. Mahajan, Librarian and Head of the Department, proposed a vote of thanks.

Role of computers in education

Computers have tremendous potentiality as a future tool of imparting education. They are being used extensively in advanced countries in educational planning and decision-making in the areas of curriculum development besides being used in the scientific and engineering disciplines and in transport planning and control. This was stated by Prof. S.K. Khanna, Secretary University Grants Commission, in a paper presented at the Second International Conference on Computer Aid Analysis and Design in Civil Engineering (Computer 85) held at the Roorkee University from January 29 to Feb 2. He also said that computers can find a widespread use in educational institutions provided facilities for their efficient working and easy accessibility to students and faculty were made available.

Referring to UGC assistance in this regard, Prof. Khanna stated that it had not only taken a big stride in providing computers to various educational institutions but had also instituted training programmes of various levels to generate trained man-power. During the Sixth Plan, the Commission had installed computers in 33 Universities. The price of such computers varied from Rs. 6 lakhs to 20 lakhs. During the Sixth Plan, Master's Degree course in computer application in 5 Universities, 4 years' B Tech. courses in 7 Universities and one year B.Sc. Diploma course in 25 Universities were started. Further, UGC had approved M.Tech. courses in computer science in the Universities.

Keeping the future requirements of computers in view, the Commission is planning to provide computers to many more colleges and universities in the country during the Seventh Plan period.

Social sciences & humanities fellowships

Two annual fellowships, tenable from 1 September 1985, have been established for Indian scholars in Social Sciences and Humanities to do research/study at a designated university in Canada for one academic term.

The candidate should be a scholar at the middle level of his/her career stream who (a) has proven ability for research and teaching; (b) will concentrate on a specific project of study in Canada from a comparative perspective on Canada-India topics; (c) has a reasonably clear plan of work during the visit indicating the intention to continue work in the same area on return to India in order to enhance the knowledge of Canada within the Indian academic community.

Preference will be given to candidates demonstrating a genuine interest in the project and with prior work and experience in the area.

The Shastri Indo-Canadian Institute will bear the cost of travel of the selected scholars to and from the designated university. In addition, the Institute will pay a maintenance allowance of $ 1,500.00 p.m. for a maximum period of four months and a lump sum of $500 for purchase of books, etc.

Applications on the prescribed form are to be made to the Head of the institution, who will nominate the candidate.

Nominations are to reach the Shastri Indo-Canadian Institute, 92 Golf Links, New Delhi, by **31 March 1985**. All nominations should be accompanied by **seven copies** of the application with **equal** number of plan of research/study.

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(Basic Level, Intermediate Level & Advanced Level)

Applications are invited from college/university teachers for admission to three Correspondence courses in Evaluation Methodology and Examinations at Basic Level, Intermediate Level and Advanced Level, each of six months duration (1st April, 1985 to 31st October, 1985). Basic Level course is offered from Regional centres at Delhi, Bombay and Madras. A personal "Contract Programme" for three days is planned and prescribed books will be supplied to every candidate.

Requests for prospectus and application forms accompanied by a crossed Indian Postal Order for Rs. 5/- drawn in favour of Secretary, Association of Indian Universities and a self-addressed stamped (Re. 1/-) envelope should reach the undersigned. The last date is **15th March, 1985** for non-sponsored candidates and 30th March, 1985 for sponsored candidates. For sponsored candidates, universities/institutions can pay the course fee and travel expenses for contact programme from UGC unassigned grants.

Prof. V. Natarajan
Project Director (Exams.)
Association of Indian Universities
AIU House, 16 Kotla Marg,
New Delhi-110002.

Advice to journalism students

India has complete press freedom and "I am very proud of it," observed noted journalist, Kuldip Nayar, while addressing students of the Department of Journalism and Mass Communication of Devi Ahilya Vishwavidyalaya on 15-1-1985. Nayar said that except for a very brief period during emergency, when he was jailed, no harassment was ever caused to him even though he had been writing against the government. However, some journalists were making compromises with the government.

Nayar asked the students of Journalism not to succumb to any kind of pressure and report fearlessly whatever they felt was right.

He said that journalism was a very sacred profession which required an honest commitment. Whatever one felt was right should be reported with full conviction.

It was true that reporting a truth sometimes involved serious repercussions. Your employer may take away your job and the government may become angry. "But one should not give up", Nayar advised the young journalists.

He further said that the use of the sacred columns of newspapers should be made very objectively and they should not be exploited for the expression of personal vendetta.

He also advised young journalists to write and re-write their copies with a view to make further improvements. "Every sentence of my nine books published so far has been re-written atleast thrice and still I am never satisfied with myself."

Nayar said it was very easy to write difficult sentences but very difficult to write easy sentences like Gandhiji which could be understood by even a layman.

Nayar said that there was a dearth of good journalists all over the country. There were plenty of opportunities for them provided they could prove their worthiness.

"Journalists are never born. One would have to work hard for becoming a journalist", he said.

Computer Science Deptt. at Cochin Varsity

Prof. C.S. Jha, former Educational Adviser (Technical) to the Govt. of India, inaugurated the Department of Computer Science of the University of Cochin as well as its M.Tech. programme in Computer Science. In his inaugural address, Prof. Jha paid glowing tributes to the University of Cochin for the remarkable contributions it had made in promoting advanced research and training in many frontier areas of science and technology. The University had grown into a high-tech institution of great importance. Elaborating on the multifarious applications of computers and the information revolution that was sweeping the world, Prof. Jha said that India had a long way to go in the area of computerisation. It was sad that millions of our students did not have access to a computer. The problem was also not so much a question of providing computer, as the mammoth effort that had to be put into train people to use the computer. Prof. Jha also emphasised the importance of utilising computer for the welfare of the poor people of India.

The M.Tech Programme in Computer Science had the approval of the All India Council for Technical Education and the University Grants Commission. The UGC had provided a non-recurring grant of Rs. 20 lakhs and a recurring grant of Rs. 4.8 lakhs for running the programme. All the 12 students to this programme were admitted through the Graduate Aptitude Test in Engineering (GATE) conducted on an all-India basis and each one of them would get a scholarship of Rs. 1000 per month.

Presiding over the meeting, the Vice-Chancellor Dr. Gopalan said that the Government of India had recently approved the establishment of a major computer facility costing about Rs. 200 lakhs at the University as a joint venture of the Defence Research and Development Organisation (DRDO) and the University. Similarly the Science & Engineering Research Council (SERC) of the Government of India had approved the establishment of a dye-laser centre at the University for strengthening front-line research in laser spectroscopy. The dye laser facility which would be the first of its kind to be provided in an Indian University by the Department of Science & Technology (DST) would serve as a common facility to be utilised also by other Universities in Kerala and neighbouring States.

Devi Ahilya Varsity releases Prayog

B.J. Com. students' weekly laboratory journal named 'PRAYOG' was started by the Department of Journalism and Mass Communication of Devi Ahilya Vishwavidyalaya, Indore on 10.1.1985. Shri Kamal Dixit, Editor of Hindi Daily, 'Nav Bharat' released its first issue.

Dr. Navin C. Jain, Coordinator of the Department congratulated the students for their efforts. He urged the students to continue publishing this paper every week to have practical experience in journalism.

The Department and its 2-year B.J. Com. course were inaugurated on 3.10.1984 by Dr. S.M. Dasgupta, Vice-Chancellor of the University, who emphasised the role of Journalism and Mass Communication in promoting social change. He invited the working journalists of Indore to help the University in imparting practical training in this new subject.

News from Agril. Varsities

Seminar on Environmental Pollution in Punjab at PAU

Dr. M.S. Randhawa, a former Vice-Chancellor of the Punjab Agricultural University, said recently that air, water and soil which were the most precious resources should be preserved by framing a sound policy of industrialisation in Punjab. He further said that the industrialisation in Punjab had taken place haphazardly and polluting industries were being located in densely populated areas causing great health hazard to human lives.

Dr. Randhawa was inaugurating a one-day State-level Seminar organised at PAU on 4th February on the 'Status of Environmental Pollution in Punjab' jointly organised by the Directorate of Ecology of the PAU and the Punjab Board for the Prevention of Water and Air Pollution. A large number of scientists, engineers and industrialists from all over the State attended the seminar.

Dr Randhawa cautioned that no industrial effluents should be allowed to mix with the canal water as it was used for irrigation to crops apart from providing potable water to the rural people as well as for domestic animals. Dr Randhawa urged the industrialists to plant deciduous trees around their factories to keep the atmosphere clean.

Dr A.S. Atwal, Director of Ecology of PAU said that problem of soil, water and air pollution had become acute in recent years owing to deforestation, soil erosion, water-logging, intensive agriculture and excessive use of farm chemicals, open sewage system, poor sanitation, concentration of industrial units in the urban areas and passing of industrial effluents into the canals. Dr Atwal further said that some industrial units discharged huge quantity of effluents in sewage stream or just left loose on the ground. These wastes contained nitrates, fluorides, heavy metals like lead, cadmium, zinc, copper and chromium besides disease causing microflora which were responsible for causing respiratory and other diseases. Dr. Atwal said that pollution could be minimized with the co-ordinated efforts of the scientists and technologists who could suggest appropriate measures for the abatement of soil, water and air pollution.

Dr Sukhdev Singh, Vice-Chancellor of the PAU while delivering his presidential address said that there was a need to create an awareness among the general public through published material about the hazards of pollution. He said that root crops raised by irrigating them with polluted water could cause various diseases. He further said that about 5 million tonnes of paddy-straw was burnt in Punjab every year which was a big threat to human health. He suggested that the paddy straw with little modification could be used as fuel in the factories. Dr Sukhdev Singh said that since major source of water pollution was the discharge of community waste produced from towns and cities and industries located in and around human settlements, sewage treatment plants should be got installed to treat the wastes before their final disposal.

Earlier, welcoming the Chief Guest and the participants, Mr N.S. Tiwana, Member-Secretary of the Board said that the Seminar was aimed at creating awareness about the various facets of pollution problems and to find workable solution for maintaining the quality of environment for the very survival of life.

Mr B.M. Munjal, Managing Director of Hero Cycles, Ludhiana while proposing a vote of thanks urged the Ecology experts to evolve a low cost technology for the prevention of pollution so that industrial units with less resources could easily adopt the same.

Punjabrao Krishi Vidyapeeth starts Ph.D courses

At a function held under the Chairmanship of Dr. K.R. Thakare, Vice-Chancellor, Punjabrao Krishi Vidyapeeth, on 21st January 1985, Dr. K.G. Deshmukh, Vice-Chancellor of the Amravati University inaugurated the start of regular Ph.D courses at PKV.

The courses are to be started from the current academic session in the subjects of Agronomy, Botany, Entomology, Pathology, Vety. Surgery, Medicine and Gynaecology in Agricultural and Veterinary Faculties.

Dr. Deshmukh in his inaugural speech pointed out that agricultural universities had contributed a lot for the development and prosperity of this country and befitting this task whatever research work was undertaken in the university should be related to the betterment of the society. Likewise, agriculture being the chief occupation of this country and gradually heading towards becoming an industry every section of the society must get agricultural education. Therefore, it had become of prime importance to bring about desirable changes in the educational system in order to reach the desired goal. He further stressed that the time had now come for coordination between the traditional and agricultural universities for the purpose of meaningful and useful research work which will satisfy the need of the society as well as meet the paucity of facilities available.

Considering the anxiety of the staff and students regarding the concept of 'Open University', which had created sensations amongst the elite class of the society, Dr. Deshmukh stated that the important function of the Open University would be to bring and accommodate those who could not be absorbed so far into the stream of education.

Dr. K.R. Thakare, in his presidential speech reviewed the progress made by the University and emphasised that the University, being a seat of higher education, regular Ph.D. courses had a unique importance and hoped that this venture would be helpful to enhance the educational standards in the University.

Realising the keyrole of the teaching staff, he invited their cooperation on the eve of this historical occasion.

News from Abroad

Oxford's 'No' for conferring Doctorate on Mrs. Thatcher

The dons and senior administrators of the Oxford University defeated a proposal for conferring an honorary doctorate degree on Mrs. Margaret Thatcher, Prime Minister of U.K. The proposal was defeated by 738 to 319 votes. The main complaint of those who voted 'No' appears to have been that ever since the assumption of office by Mrs. Thatcher she had been systematically trying to cut educational grants. Although in terms of total spending there has been some increase in expenditure, many argue that this increase does not take into account inflation. It is further reported that those who ceaselessly campaigned and voted against the proposal to honour the Prime Minister were scientists and medical dons. Mrs. Thatcher herself was a science student.

There have been two other instances where Oxford University refused to confer doctorates. One was in 1925 when the proposal was for conferring the honour on Lord Asquith. The second was when a proposal for conferring the honour on Pakistan Prime Minister, Mr. Z.A. Bhutto, was defeated.

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1. Khan, Mohammad Farooq Hussain. *Genetic study of muslims of Madhya Pradesh—sunni and shiia.* H.S. Gour, Sagar.

Marine Biology

1. Gopala Krishna Bhat, U. *Studies on the benthos of Kali estuary, Karwar.* Kar U, Dharwad.

Microbiology

1. Ramesh Chander. *Decomposition of lignocellulose by species of white-rot fungus,* **Cyathus.** Bhopal U.

2. Yojana Devi, B. *Cytogenetic effects and replication of mouse adapted (WSN) and vaccine strains* (X-31) *of influenza virus in mice.* OU, Hyderabad.

Biochemistry

1. Krishnamurthi, Prabhakaran *Microbial degradation of cell wall polysaccharides with reference to* **Erwina chrysanthemi** and **Pencillium islandicum.** SPU, Vallabh Vidyanagar.

2. Parthasarathy, P.R. *Biochemical and immunological aspects of the scorpion.* **Heterometrus fulvipes** *venom.* SVU, Tirupati.

3. Pradhan, Rohit Kumar. *Biochemical studies of some tissues of* **Nemacheilus evezardi** *Day from Kotumsar cave.* RSU, Raipur.

4. Subbalakshmi, G.Y.C.V. *Studies on the enzymes of cerebral cellular glutamate metabolism in hyperammoniemia.* U Hyderabad.

5. Umbarkar, Prakash Dinkar. *Uterine biosynthesis of ascorbic acid with special reference to isolation and purification of L-glucolactone oxidase in goat.* Nagpur U.

6. Venkatanarayana, S. *Studies on the utilization of ragi* **Eleusine coracana** *in brewing.* U Mysore.

Botany

1. Achamamba, Bandaru. *A comparative limnologica, study into the profile of Husainsagar and Himayathsagar Lakesl Hyderabad, India.* OU, Hyderabad.

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4. Bahadur, Kunwar Naresh. *Monographic studies on the genus* **Toona** *(meliaceae).* Garhwal U, Srinagar.

5. Bhatt, S.C. *Impact of human activities and land use practices on some grassland ecosystems.* Saur U, Rajkot.

6. Chakraborty, Hiranmoy. *Cytogenetical studies in the family cucurbitaceae.* Mag U, Bodh Gaya.

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9. Joshi, M.M. *Mutagenicity of physical and chemical mutagens in* **Capsicum annum** *Linn.* Nagpur U.

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Terenzini, Patrick T., Theophilides, Christos and others. Influence on students' perceptions of their personal development during the first three years of college. *Res Hr Edn* 21(2), 1984. 178-194.

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Nirmala Banerjee:*Women Workers in the Unorganised Sector : The Calcutta Experience*

An analysis of an increasingly significant phenomenon-the urban women worker outside the organised sector. Rs. 45

Kumud Sharma : *Women in Focus: A Community in Search of Equal Roles*

This study explores the multifarious experience of being a woman and provides the basis for the understanding of broader aspects of sex role differentiation and its structural correlates. Rs. 30

Orient Longman

Registered Office : 5-9-41/1, Bashir Bagh, Hyderabad-500 029

Branches : Kamani Marg, Ballard Estate, Bombay 400038; 17 Chittaranjan Avenue, Calcutta-700 072; 160 Anna Salai, Madras-600002; 1/24 Asaf Ali Road, New Delhi-110002; 80/1 Mahatma Gandhi Road, Bangalore-560001; 5-9-41/1 Bashir Bagh, Hyderabad-500029; SP Verma Road, Patna-800001.

VIKRAM UNIVERSITY, UJJAIN

CENTRE FOR

ADULT/CONTINUING EDUCATION & EXTENSION PROGRAMME

For the year 1984-85 the Centre for Adult/Continuing Education and Extension Programme has set up 400 **ADULT EDUCATION CENTRES** covering 18 affiliated colleges in this programme. In **CONTINUING EDUCATION** 33 short term courses have been developed for various target groups. 25 affiliated colleges have been involved in the **POPULATION EDUCATION** programme. For the linkage of **RURAL DEVELOPMENT PROGRAMME** with the **ADULT EDUCATION PROJECT**, a new concept of UNIVERSITY VILLAGE HOME has been formulated to involve the 85 villages around Ujjain adopted by the University for social, educational, cultural sports activities and total village development. A CO-OPERATIVE SOCIETY has also been formed to set up **COTTAGE, HOME AND SMALL SCALE INDUSTRIES** in these 85 villages wherein the 16 **SUPERVISORS**, 210 **INSTRUCTORS** and 6000 **ADULT LEARNERS** will be the participants as well as beneficiaries. **TWO ACTION RESEARCH PROJECTS** have also been launched involving the 400 **ADULT EDUCATION CENTRES.**

The Centre for Adult/Continuing Education and Extension Programme of the Vikram University has developed and published a complete set of literature on ADULT LITERACY comprised of the following books in HINDI :

1.	**AKSHARA (अक्षरा)** : A unique Primer for learning LETTERS through poetry	Rs. 5/-
2.	**SABAD (सबद)** : A work book for adult learners.	Rs. 2.50
3.	**UJALE CHALO (उजाले चलो)** A collection of Short Stories for adult learners	Rs. 3/-
4.	**ROSHNI TAPKE (रोशनी टपके)** A collection of poems for adult learners	Rs. 3/-
5.	**RAMU AUR DEENU KI KAHANI (रामू और दीनू की कहानी)** A short novel based on the lives of two Farmers	Rs. 5/-
6.	**RAMU ANE DEENU KI BARTAN (रामू अने दीनू की बारतां)** Malwi translation of the above book.	Rs. 5/-
7.	**ARAM HARAM HAI (आराम हराम है)** A short novel based on the lives of Labour Community	Rs. 5/-
8.	**ARAM HARAM HAI (आराम हराम है)** Malwi translation of the above book.	Rs. 5/-
9.	**CHAR PEEDHIYON KI KATHA (चार पीढ़ियों की कथा)** A short novel based on the lives of Women	Rs. 5/-
10.	**CHAR PANKHELI KI BARTAN (चार पंखेली की बारतां)** Malwi translation of the above book.	Rs. 5/-
11.	**PARAS BEESI (पारस बीसी)** A short novel based on 20 Point Programme	Rs. 5/-
12.	**PARAS BEESI (पारस बीसी)** Malwi translation of the above book	Rs. 5/-
13.	**KISAN KATHA (किसान कथा)** A pictorial 12 page chart on FARMERS	Rs. 15/-
14.	**KAMGAR KATHA (कामगार कथा)** A pictorial 12 page chart on Labour Community.	Rs. 15/-
15.	**MAHILA KATHA (महिला कथा)** A pictorial 12 page chart on WOMEN	Rs. 15/-
16.	**PARAS KATHA (पारस कथा)** A pictorial 11 page chart on 20 Point Programme	Rs. 15/-
17.	**AKSHAR YATRA (अक्षर यात्रा)** A pictorial chart for learning LETTERS	Rs. 11/-
18.	**SANDIPANI SAMVAD (सान्दीपनी संवाद)** A teachers' guide for teaching above literature	Rs. 5/-

The author of the entire literature is Dr. R.L. Kanwal, Co-ordinator and the editor is Dr P.K. Bhattacharya, Director.

The cost of the entire set is Rs. 129.50 . Please write to any one of the following addresses.

DR. P.K. BHATTACHARYA
DIRECTOR
CENTRE FOR ADULT/CONTINUING EDUCATION
& EXTENSION PROGRAMME
VIKRAM UNIVERSITY, UJJAIN.

SHRI L.N. PARMAR
REGISTRAR
VIKRAM UNIVERSITY, UJJAIN (M.P.)

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Calcutta.
4. Association of Indian Universities
New Delhi.
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Varanasi.
6. British High Commission
British Council Division
Calcutta.
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Dibrugarh.
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CLASSIFIED ADVERTISEMENTS

UNIVERSITY OF DELHI

DELHI-110007

Advt. No. Estab. IV/98/85 **Dated : 9-2-1985**

Applications on prescribed form are invited for the following posts:

	Department	Designation	
1.	Education	(a) One Professor (b) (i)* One T.G.T. (Mathematics) (ii)* One T.G.T. (Sanskrit) (iii)* One T.G.T. (Biology) (iv)* One working experience Teacher/Craft Teaching (v)* One Jr. P.E.T. (P.T.I.) (Physical Education)	For Experimental Basic School of the Department
2.	Political Science	One Professor of Indian Politics	
3.	Music	One Professor in Hindustani Music	
4.	Library & Information Science	One Professor	
5.	Computer Science	One Reader	
6.	History	One Reader (For South Campus)	
7.	Economics	One Reader	
8.	Social Work	One Reader	
9.	Anthropology	(i) One Reader (ii) Two Lecturers	
10.	Psychology	One Lecturer in Applied Psychology (For South Campus)	
11.	Philosophy	One Lecturer (For South Delhi Campus) (Temporary for about 2 years)	
12.	W.U.S. Health Centre	* One Physiotherapist	
13.	Chinese & Japanese Studies	* Two Laboratory Attendants (One reserved for Scheduled Caste).	

The Scale of the Pay of the posts are

Professor : Rs. 1500-60-1800-100-2000-125/2-2500.

Reader : Rs. 1200-50-1300-60-1900.

Lecturer : Rs. 700-40-1100-50-1600.

Physiotherapist : Rs. 455-15-560-EB-20-700.

T.G.T. : Rs. 440-15-515-EB-15-560-20-700-EB-25-750.

Jr P.E.T. (P.T.I.) : Rs. 425-15-560-EB-20-640.

Laboratory Attendants : Rs. 210-4-250-EB-5-270.

All posts carry D.A., C.C.A. and H.R.A. as admissible under the rules in force in the University from time to time.

Essential Qualification for:

Professorships

An eminent scholar with published work of high quality actively engaged in research. Ten years' experience of teaching and/or research. Experience of guiding research at doctoral level.

OR

An outstanding scholar with established reputation who has made significant contribution to knowledge.

Readerships

Good academic record with at least second class Master's degree in a relevant subject with a doctoral degree or equivalent published work. Evidence of being actively engaged in (i) research, or (ii) innovation in teaching methods or (iii) production of teaching materials:

Five years' experience of teaching in under-graduate/post-graduate classes and/or post-doctoral research work with evidence of published work.

Lectureship

(a) A Doctorate's degree or research work of an equally high standard; and

(b) Good academic record with at least second class (C in the seven point scale Master's degree in a relevant subject from an Indian University or an equivalent degree from a foreign University.

Having regard to the need for developing interdisciplinary programmes, the degree in (a) and (b) above may be in relevant subjects.

Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may relax the requirement of "at least second Class in Master's degree examination" in terms of level achieved at the said examination as prescribed in (b) above.

Provided further that if a candidate possessing a Doctor's degree or equivalent Research work is not available or is not considered suitable, a person possessing a good academic record, (weightage being given to M. Phil or equivalent degree or research work of quality) may be appointed on the condition that he will have to obtain a Doctor's/M. Phil degree or give evidence of research of high standrd within eight years of his appointment, failing which he will not be able to earn future increments until he fulfils these requirements.

Explanation

1. For determining "good academic record" the following criteria shall be adopted:

(i) A candidate holding a Ph.D./M.Phil degree should possess at least a second Class Master's degree; or

(ii) A candidate without a Ph.D./M.Phil degree should possess a high second class Master's degree and second class in the Bachelor's degree; or

(iii) A candidate not possessing Ph.D./M.Phil degree but possessing second class Master's degree should have obtained first class in the Bachelor's degree.

2. Persons having secured at least 55% marks or more shall be deemed to have passed the examination in the high second class.

T.G.T. (Mathematics)

(i) B.Sc. or B.A. Degree with not less than 45% marks in aggregate from a Recognised University with Mathematics as one of the main subjects. (Condition of 45% marks relaxable in case of teachers of Primary Schools of Local bodies/Assistant Teachers of Govt. Schools in the Union Territory of Delhi and Scheduled Castes candidates).

OR

B. Tech. Education of Regional College of Education, Ajmer.

(ii) Degree/Diploma in teaching.

T.G.T. (Sanskrit)

(i) B.A. Degree with not less than 45% marks in aggregate from a Recognised University with Sanskrit as one of the main subject. (Condition of 45% relaxable as in the case of T.G.T. Mathematics).

OR

Its equivalent oriental degree in Sanskrit.

(ii) Degree/Diploma in teaching.

OR

S.A.V. Certificate.

T.G.T. (Biology)

Biology as a main subject in B.Sc. Degree/Diploma in Education.

Working experience Teacher/Craft Teaching

(i) Higher Secondary from a recognised University/Board.

(ii) Two years diploma/certificate of training in any one of following trades (Preferably more than one) from I.T.I. or any other recognised Institution.

Electric Gadgets/Tailoring & Embroidery/Leather Work/Household Gadgets/Music-Vocal/Meal Planning preservation (Home Sc.)/Spinning & Weaving/Pottery Paper Craft/Commercial Art.

(iii) Two years professional experience in any Institution or a concern of repute.

Jr. P.E.T. (P.T.I.)—Physical Education

Matric with certificate in Physical Education (Training).

Age : Below 30 years (40 years in case of woman candidates). Age relaxable in the case of Teachers of Primary Schools of local bodies of the Union Territory of Delhi by one year for every years of Service rendered in such schools subject to the maximum age of 45 years.

Physiotherapist

Diploma in Physiotherapy from a recognised Institution.

Laboratory Attendants

Should have passed Matriculation Examination and should have some familiarity with Chinese/Japanese Research materials.

Special/Desirable Qualifications for Professorship in Music

Good performing ability with a comprehensive repertoire of traditional ragas and forms.

Readership in Computer Science

Specialization in Computer Based Optimization Methods.

Readership in History

Medieval Indian History with knowledge of Persian.

Readership in Social Work

Preference will be given to candidates having specialization in or holding degree/diploma in Correctional Services/Mental Health.

Readership in Anthropology

Specialization in any field of Physical Anthropology.

Lectureship in Anthropology

First Post : Specialization in Physical Anthropology. Training/Knowledge in different aspects of Forensic Science.

Second Post : Specialization in any field of Physical Anthropology.

Laboratory Attendants : Experience of working in a Language Laboratory.

The prescribed application forms can be had from the Information Section of the University either personally or by sending a self-addressed envelope (size 13 cm× 28cm) with postage stamps worth Rs. 3.45 P.

The candidates will have to produce the original documents relating to their age, qualifications, experience etc. at the time of interview.

Applications (separate for each post) accompanied by attested copies of Degrees, other certificates, marksheets, published research articles, etc. should be addressed to the Registrar. However, applications for the posts marked asterisk (*) should be sent directly to the Head of the Department concerned. The last date prescribed for receipt of the applications is **9-3-1985.**

Note

1. It will be open to the University to consider the names of suitable candidates for teaching posts who may not have applied. Relaxation of any of the qualifications may be made in exceptional cases, in respect of all the posts on the recommendations of the Selection Committee.
2. Canvassing in any form by or on behalf of the candidates will disqualify.
3. Candidates for teaching posts only from outside Delhi, when called for interview will be paid to and fro single second class rail fare.
4. The University reserves the right not to fill up any of the vacancies advertised if the circumstances so warrant.

Madan Mohan
REGISTRAR

DAYALBAGH EDUCATIONAL INSTITUTE

(Deemed University)
DAYALBAGH, AGRA-282005

Advertisement No. 2/85

Applications are invited for the following posts:

1. Reader in Electrical Engineering —One
2. Lecturer in Drawing and Painting —One
3. Lecturer in Rural Development—One
4. Lecturer in Agricultural Operations —One
5. Lecturer in Cultural Education—One
6. Lecturer in Applied Business Economics (Commerce)—One
7. Lecturer in Accountancy & Law (Commerce)—One
8. Lecturer in English—One
9. Lecturer in Mechanical Engineering—One (leave vacancy upto 31-3-1986)
10. Instructor in Performing Arts—One
11. Teaching Assistants (Elect. & Mech. Engg.)—Two

Pay Scales

For Post No. (1) Rs. 1200-1900-(2 to 10) Rs. 700-1600, (11) Rs. 850/- (fixed) for graduate in Engg., Rs. 950/- (fixed) for postgraduate (M. Tech.) Allowances as per Institute's Rules.

Note

1. Separate application should be submitted for each post.
2. The number of posts may vary according to need.
3. Government or Semi-Government employees should apply through their employers or produce "No Objection" certificate from their employers at the time of interview.
4. Application forms alongwith full details of the qualifications for each post can be had from the office of the Registrar of the Institute on request accompanied by the prescribed fee of Rs. 5/- plus self-addressed STAMPED envelope of size 9"×4".
5. Applications complete in all respects alongwith enclosures and registration fee of Rs. 10/- should reach the Registrar of the Institute upto **25-3-85**.
6. All payments be made either in cash at the Institute's cash counter or by the Indian Postal Order/Bank Draft drawn in favour of "Dayalbagh Educational Institute" payable at Agra.

INDIAN INSTITUTE OF SCIENCE

BANGALORE-560012

Advertisement No. R(IA) 308-6/85
Dated 4th February 1985

Applications in the prescribed form are invited for the post of Assistant Professor (One post) in the Molecular Biophysics Unit at the Institute in the grade Rs. 1200-50-1300-60-1900 plus allowances admissible at Central Government rates prevailing at the Institute from time to time.

Emoluments at the minimum of the scale total to Rs. 2615.00 excluding House Rent Allowance (HRA maximum payable is 15% of pay limited to Rs. 400/- subject to the employee meeting up to 10% of pay or on a flat rate of Rs. 159.75 per month).

Qualifications and Experience

Essential

Ph.D. degree in the field of Crystallography with atleast 5 years research experience in structures of large biomolecules with published work.

Desirable

Experience in the application of diffraction studies to virus structures.

Job Description

The selected candidate will be required to undertake original research on the structures of large biomolecules and the application of diffraction studies to virus structures, teach post-graduate students and guide Ph.D. students in their research work.

Relaxation

The stipulation regarding the number of years of relevant experience is relaxable at the discretion of the competent authority in the case of candidates possessing exceptionally good record and outstanding capabilities.

Tenure of Appointment

Normally, all new appointments at the Institute are made an contract for a period of five years including an initial probationary period of one year. If, at the end of the first contract, the work and progress of the candidate is found satisfactory, the Institute may consider offering a continuing appointment till the age of superannuation, i.e. 60 years.

General

Application forms (six copies) can be obtained from the Registrar, Indian Institute of Science, Bangalore 560012, on requisition. Each request for application forms should be accompanied by a crossed Indian Postal Order for Rs. 5/- (non-refundable) made payable to the Registrar, together with a self-addressed stamped (Rs. 3.30) envelope of the size of 28 cms× 18 cms. The payment of application fee is exempted in the case of candidates belonging to Scheduled Castes/Scheduled Tribes on production of caste certificate from a competent authority.

The last dates are:

(a) For issue of application forms : **6-3-1985**.

(b) For receipt of completed application forms : **21-3-1985**.

Applicants in the service of Government, Quasi-Government, Government-aided or similar institutions should apply through proper channel. Otherwise, their applications will not be considered.

It shall be open to the Selection Committee for a higher post to recommend a person for a lower post if a suitable candidate for the higher post is not available.

Due consideration will be given to candidates who are physically handicapped provided they are academically/ scientifically sound and well qualified and generally comparable to others.

Higher starting salary may be considered to candidates with exceptional merit.

Kindly quote the advertisement No. and date in all correspondence. Candidates should ensure that applications are complete in all respects.

Detailed terms and conditions of appointment will be supplied along with the application forms.

REGISTRAR

PUNJABI UNIVERSITY
PATIALA
Advertisement No. 73/PRO/Estt./Feb. 85

Applications are invited for the following posts:

1. **Care Taker** : One (Grade Rs. 300-5-325/5-350/10-430).

Qualifications

Matric/Higher Secondary 2nd class with post-Matric Diploma/Certificate Course in Library Science.

2. **Laboratory Attendant** : One (Deptt. of Zoology) (Grade : Rs. 400-10-450/15-525/15-600).

Qualifications

Candidates should have passed Matriculation examination with Science (Physics & Chemistry, Hygiene and Physiology) as one of the subjects. Educational qualifications are relaxable if the candidate has 5 years experience of Post-graduate Laboratory work in the subject concerned.

3. **Library Attendant :** One (Grade Rs. 300-5-325/5-350/10-430)

Qualifications

Matric/Higher Secondary 2nd class with Post-Matric Diploma/Certificate Course in Library Science.

4. **Technician Grade-II** One (Deptt. of Human Biology) (Grade Rs. 480-15-600/20-700/25-850 30-880)

Qualifications

Matric First division with science.

OR

Matric Second division with science and three years experience of working in a Laboratory. Preferably in a biological Laboratory.

Desirable

Knowledge of sports and allied equipment.

Note

Persons working in the Science Departments of this University as Laboratory Attendants and Museum Attendants and having eight years service or either of these posts shall also be eligible to apply for the above post irrespective of the qualifications.

General

Candidate must have attained the age of 18 years on the date of submission of his/her application form.

Higher start within the grade admissible depending upon the ability and experience of the candidate. House rent and dearness allowance, Provident Fund and Medical facilities according to the University rules.

Applications, complete in all respects on the prescribed form accompanied by a crossed Postal Order worth Rs. 5/- (Rs. 2/- for candidates belonging to Scheduled Caste/Tribes & Backward Classes) drawn in favour of the Registrar, Punjabi University, Patiala, should reach the University by **3rd March, 1985.** The forms can be had from the Production & Sales Officer, Publication Bureau, Punjabi University, Patiala on payment of Re. 1/- by sending a crossed Indian Postal Order drawn in favour of the Registrar, Punjabi University, Patiala, alongwith self addressed envelope of the size of 25× 10 cms. stamped with 50 paise postage which should be superscribed at the top in bold letters REQUEST FOR APPLICATION FORM FOR THE POST OF————————.

Persons already in service should apply through proper channel. Those who are not in position to submit their applications through proper channel before the due date should submit an advance copy before the due date and regular applications through proper channel by **5th March, 1985.**

D.S. Kang
REGISTRAR

VIDYASAGAR UNIVERSITY
MIDNAPORE, WEST BENGAL
Employment Notification No. VU-4/85

Applications are invited for the following posts and must contain (a) full bio-data, (b) attested copies of all academic, service, experience and SC/ST (if any) certificates, (c) two recent character certificates from persons of high rank (of which one must be from head of applicant's present office), and (d) a non-refundable fee as specified below (half the amount in case of SC/ST/ Physically handicapped candidates) in crossed postal order payable to **Vidyasagar University, Midnapore.** Besides grade pay, all posts will carry allowances admissible under the University Rules. Applications should be addressed to the Vice-Chancellor for categories 1 and 2, and to the Deputy Registrar (by designation) for all other posts, and must reach the University office by the **15th March, 1985.** No T.A./D.A. will be admissible for appearing at interviews tests. Persons selected will have to reside within the Midnapore municipal area.

1. One Registrar : Rs. 1500-2500/- (Fee Rs. 10/-).

(a) **Essential** : Uniformly good academic record with (i) at least a B+ Master's Degree or its equivalent; (ii) at least 10 years' experience in a University or an Institution of higher learning, including 5 years in high level administration; or high level administrative experience in a Govt. of quasi-Govt. organisation, or a good background in administration and management in a senior position; (iii) Age not less than 40 years, relaxable in case of exceptionally qualified candidates.

(b) **Desirable** : Doctorate Degree or published research work of merit.

2. One Finance Officer : Rs. 1500-2500/- (Fee Rs. 10/-).

(a) **Essential** : Uniformly good academic record with (i) at least a B+

Master's degree in a commercial subject with specialisation in Finance, or Bachelor's Degree in Commerce or Mathematical Science with Chartered/Cost Accountant or IAAS or equivalent professional qualifications.

(b) At least ten years' working experience in management of finance in a University/Govt./reputed commercial Establishment in a high administrative post involving supervision, control, planning and audit.

(c) Age not less than 40 years, relaxable in case of exceptionally qualified candidates.

Appointments may not be limited to applicants only. In the absence of suitable candidates having the given qualifications, (a) the requirement of administrative experience may be reduced or waived in case of a Professor/Reader/Principal serving for at least two years; (b) the requirement of academic qualification may be relaxed in case of candidates having the required administrative experience along with at least the prescribed academic qualification for college teachers.

REGISTRAR

ALIGARH MUSLIM UNIVERSITY

ALIGARH

Advertisement No. 41/84-85

Applications on the prescribed form are invited for the following posts:

Faculty of Medicine

Professor

Scale of pay : Rs. 1500-60-1800-100-2000-125/2-2500 plus allowances.

1. **Professor of Ophthalmology, Department of Ophthalmology**

Qualifications

M.S. (Ophthalmology)
M.D. (Ophthalmology)

Teaching/Research Experience

As Reader in Ophthalmology for four years in a Medical College.

Readers

Scale of pay : Rs. 1200-50-1300-60-1900 plus allowances.

2. **Reader in Anatomy (Temporary but likely to become permanent)**

Department of Anatomy.

Qualifications :

I. Essential

M.S. (Anatomy)
M.B.B.S. with M.Sc. (Anatomy)
Ph.D. (Medical Anatomy)
D.Sc. (Medical Anatomy)

Teaching/Research Experience

As Lecturer in Anatomy for five years in a Medical College.

II. Desirable

Original research publications in the speciality in Indian and foreign journals.

3. **Reader in Nephrology, Department of Medicine**

Qualifications

D.M. (Nephrology)
M.D. in Medicine with two years special training in Nephrology.

Teaching/Research Experience

As Lecturer in Nephrology for five years in a Medical College.

Note :

Those candidates who have applied in response to Advertisement Nos. 8/84-85 dated 4th June, 1984 and 22/84-85 dated 29th September, 1984 need not apply again. They will be considered on the basis of their previous applications if eligible.

4. **Reader in Bio-Physics, Department of Bio-Chemistry**

Qualifications

I. Essential

M.D. (Biophysics)
Ph.D. (Biophysics)
M.D. (Physiology) or
M.D. (Biochemistry) with one year training in Biophysics.

Teaching/Research Experience

As Lecturer in Biophysics for five years in a Medical College.

II. Desirable

The candidate should have made notable contributions in Biophysics/Biophysical Chemistry and in particular in the areas of conformation of proteins, nucleic acid, conformational transitions and protein folding.

Job Specifications

The selected candidate will be responsible for organising the teaching and research programmes in Biophysics, particularly in the areas of structural studies of proteins and nucleic acids.

5. **Reader in Physiology, Department of Physiology**

Qualifications

I. Essential

M.D. (Physiology)
M.B.B.S. with M.Sc. (Physiology)
Ph.D. (Medical Physiology)
D.Sc. (Medical Physiology)

Teaching/Research Experience

As Lecturer in Physiology for five years in a Medical College.

II. Desirable

Original research publications in the speciality in Indian & foreign journals.

6. **Reader in General Surgery, Department of General Surgery**

Qualifications

M.S. (Surgery)/
M.S. (General Surgery) or
M.S. (Paediatric Surgery)

Teaching/Research Experience

As Lecturer in Surgery, Paediatrics Surgery for five years in a Medical College.

7. **Reader in Preventive & Social Medicine, Department of Preventive & Social Medicine**

Qualifications

I. Essential

M.D. (Social & Preventive Medicine)/(Community Medicine), M.D. (Medicine) with D.P.H.

Teaching/Research Experience

As Lecturer in Social & Preventive Medicine for five years in a Medical College.

II. Desirable

Original research publications in the speciality in Indian and foreign journals.

Note :

1. **For all the above posts of Readers** Persons appointed as Lecturer prior to 1982 recommendations, the teaching experience as Registrar and as Lecturer be considered eligible for appointment as Reader.

2. **For the posts at Sl. Nos. 5, 6 and 7 Reader in Physiology, Reader in General Surgery and Reader in Preventive and Social Medicine. The candidates who have applied in response to Advertisement No. 8/84-85 dated 4th June, 1984 need not apply again. They will be considered on the basis of their previous applications if eligible.**

Lecturers

Scale of Pay : Rs. 700-40-1100-50-1600 plus allowances.

8. **Lecturer in General Medicine (Temporary), Department of Medicine.**

Qualifications

I. Essential

M.D. (Medicine)/
M.D. (General Medicine)

II. Desirable

Published research work in the subject.

9. **Lecturer in Cardiology, Department of Medicine**

Qualifications

I. Essential

D.M. (Cardiology)

II. Desirable

Published research work in the speciality.

10. **Lecturer-cum-Paediatric Surgeon, Department of Paediatrics**

Qualifications

I. Essential

M.Ch. (Paediatric Surgery)

II. Desirable

Published research work in the speciality.

Note

Those candidates who have applied in response to Advertisement No. 8/84-85 dated 4th June, 1984 need not apply again. They will be considered on the basis of their previous applications if eligible.

11. **Medical Superintendent, JN Medical College Hospital**

Scale of Pay : Rs. 1500- 60-1800 plus allowances

Qualifications

I. Essential

M.B.B.S. from a recognised University with post-graduate qualifications in a clinical subject. Experience in Hospital Administration for at least three years in a Supervisory capacity in a Central or State Government Hospital preferably in a teaching Hospital.

II. Desirable

Degree/Diploma in Hospital Administration.

Higher initial start may be given to candidates possessing exceptional qualifications and experience. Candidates interviewed may be paid contribution towards their T.A. equal to one single second class Railway fare only.

Prescribed application forms and instructions may be had from the Assistant Registrar (Selection Committees), Registrar's Office, A.M.U., Aligarh on payment of Rs. 5/- to be deposited in the Cash Section, Finance Office, A.M.U., Aligarh or through an Indian Postal Order payable to the Finance Officer, A.M.U., Aligarh either personally or by sending a self-addressed stamped envelope of 23×10cm. **Last date for receipt of applications is 5th March, 1985 (during office hours). Incomplete applications and those received late will not be considered.**

All applications from outside Aligarh should be sent by Registered post addressed by name to Dr. H.A.S. Jafri, Secretary to Vice-Chancellor, Aligarh Muslim University, Aligarh.

Zamir Ahmed Khan
REGISTRAR

MALAVIYA REGIONAL ENGINEERING COLLEGE

JAIPUR

Advertisement No. 5

Applications on prescribed form are invited for the following posts :

1. Librarian-1

Rs. 1210-30-1300-40-1500-50-1800-60 2040.

2. Manager of Hostels-1

Rs. 820-20-900-25-1000-30-1300-40-1500-50-1550.

Qualifications for the post No. 1

Master's Degree with a degree or Diploma in Library Science and about 5 years professional experience. Working knowledge of German/French/ Russian desirable.

Qualifications for the post No. 2

Graduate with about 3 years experience in managing/running of hostel messes or an Ex-army commissioned officer with relevant experience. In the case of an Ex-army Commissioned Officer, the condition of graduation will not be an essential qualifications.

The benefit of CPF, Gratuity, DA, HRA and CCA is admissible as per rules of the College. Candidates aged 55 years or above but below 60 can be considered for appointment, if found suitable, either on contract basis or on temporary basis. Higher starting salary is also permissible, of course, depending upon the suitability of the candidates. Suitable residential accommodation, if available would also be allotted in the campus of the College on payment of rent as per rules.

Application form may be obtained by sending Re. 1/- in the form of crossed IPO in favour of the Registrar, Malaviya Regional Engineering College, Jaipur and payable at Post Office, Jaipur alongwith a self addressed envelope of size 24cm×10cm. stamped with 90 paise. On the envelope containing request for application form, the word "Request for application form for the post..................." may be superscribed.

Last date for receipt of application is **12-3-1985.**

K.S. Rathore
REGISTRAR

TRAVEL GRANTS TO THE U.S.

The U.S. Educational Foundation in India, "Fulbright House", 12 Hailey Road, New Delhi-110001 invites applications no later than **June 1, 1985**, for a few Travel Only grants to the United States from Indian scholars who have research or teaching assignments in the U.S. beginning September 1985 or later. Only those with programmes for a minimum period of three months will be considered.

Candidates must

1. have a Ph.D. degree or equivalent published work
2. be Indian citizens and be present in India on the closing date of the competition
3. be proficient in English
4. be in good health
5. not have been in the U.S. during the last four years to teach or do research
6. be accepted by a recognised U.S. university or research institution for post-doctoral research and or as a visiting lecturer and must have assurance of dollar finance to cover their expenses in the U.S. for the duration of the assignment. The letter of acceptance must show the nature and duration of the assignment, and must be accompanied by evidence of dollar support, at the rate of not less than $9,000 and not more than $20,000 per academic year. The evidence of dollar support could be in the form of a grant or fellowship offered by American universities or research institutions or by Indian universities or research institutions.

The grant will provide round-trip economy class air travel, by the most direct route, from the candidate's ordinary place of residence or his academic institution to his U.S. institution and back. Excursion fare tickets valid for 120 days will be provided for those with programmes of less than four months duration in the U.S. Travel will be arranged by the Foundation and grantees must travel on U.S. visas issued against the IAP-66 provided by the Foundation and must conform to rules and regulations of the U.S. Government applicable to all exchange-visitor visa holders.

For application forms and further details contact : The Director, U.S.E.F.I., "Fulbright House", 12 Hailey Road, New Delhi-110001 before **June 1, 1985.**

MANGALORE UNIVERSITY

LIGHT HOUSE HILL, MANGALORE-575003

No. EST(1) CR 33/83-84.

Dated : 6th Feb. 1985.

NOTIFICATION

Applications in the prescribed form in eight sets are invited for the following teaching and non-teaching posts from duly qualified candidates of Indian Nationality, so as to reach the Registrar, Mangalore University, Light House Hill, Mangalore-575003 on or before **15th March 1985.**

A. TEACHING POSTS

Sl. No.	Name of the Post and Department	Scale of Pay	No. of Posts	Classification of Vacancy.
1	2	3	4	5
I. PROFESSORS				
1.	Commerce (Re-advertised)	1500-60-1800-100-2000-125/2-2500/-	1	SC
2.	Master of Business Administration (Re-advertised)	-do-	1	ST
3.	Statistics (Re-advertised)	-do-	1	GM
4.	English (Re-advertised)	-do-	1	BCM
5.	Physics (Re-advertised)	-do-	1	BSG
6.	Sociology (Re-advertised)	-do-	1	SC
7.	History (Re-advertised)	-do-	1	GM
II. READERS				
1.	Commerce (Re-advertised)	1200-50-1300-60-1900/-	2	SC-1 GM-1
2.	Sociology (Re-advertised)	-do-	1	ST
III. LECTURERS				
1.	Commerce (Re-advertised)	700-40-1100-50-1600/-	2	SC-2
2.	Library Science (Re-advertised)	-do-	2	ST-1 GM-1
3.	Sociology (Re-advertised)	-do-	1	BCM
4.	Physics (Re-advertised)	-do-	1	BSG
5.	Kannada	-do-	1	GM

NOTE

The candidates who had applied earlier for the posts of Professor in Sociology in response to advertisement dated 11-3-83 and Professors in Statistics and History in response to advertisement dated 24-1-84 need not apply again. However they may send evidences in support of additional qualifications & experience, including research publications if any in eight sets.

The general qualifications prescribed for the above posts are as follows:

I. PROFESSORS

ESSENTIAL

(a) A Doctorate Degree or published work of an equally high standard.

(b) Consistently good academic record with I or II Class (B+) Master's Degree in a relevant subject or an equivalent Degree of a foreign University.

NOTE

(1) Having regard to the need for developing Inter-disciplinary programmes the degrees in (a) and (b) above may be in relevant subjects.

(2) Provided that if the Board of Appointment is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may relax any of the qualifications prescribed in (b) above.

(3) Provided further that if a candidate possessing a Doctorate Degree or an equivalent published work is not available, the person possessing consistently good academic record and the relevant Master's degree may be appointed (due weightage being given to M.Phil., equivalent research degree or research work of quality) on the condition that such candidate will have to obtain a doctorate degree or give evidence of published work of an equally high standard within 5 years of the appointment, failing which he will not be able to earn future increments until he fulfils these requirements.

(c) 10 years of teaching-cum-research experience in degree or Post-Graduate Classes.

(d) Capacity to carry out independent research work. Should have guided candidates for research degrees successfully.

DESIRABLE

Publication of research work of high standard in the subject.

II. READERS

ESSENTIAL

Same as at I(a) and (b) above.

(c) Five years of teaching-cum-research experience in degree or Post-Graduate Classes.

DESIRABLE

Publication of research work of high standard in the subject.

III. LECTURERS

ESSENTIAL

Same as at I(a) and (b) above.

(c) Teaching in Degree or Post-Graduate Classes or research experience of not less than 2 years in all.

DESIRABLE

Publication of research work of high standard in the subject.

EXPLANATION

Consistently good academic record means overall record of all assessments throughout the academic career leading to the Master's Degree which should atleast be B+ or high Second Class.

AGE LIMIT

The applicants who have completed 60 years of age, need not apply.

B. UNDER DHARMA NIDHI YOGA PEETHA

Sl. No.	Name of the Post	Scale of Pay	No. of Posts
1.	Professor*	Rs. 1500-60-1800-100-2000-125/2-2500/-	1
2.	Reader*	Rs. 1200-50-1300-60-1900/-	1
3.	Lecturer*	Rs. 700-40-1100-50-1600/-	1

NOTE

1. *These appointments will be made on contract basis initially for a period of **5 years** and may be renewed later.
2. The candidates who had applied earlier for the above posts in response to the advertisement dated 24-1-84 need not apply again. However they may send evidences in support of additional qualifications and experience, including research publications if any in eight sets.

The general qualifications prescribed for the above posts are as follows:

1. PROFESSOR

ESSENTIAL

(a) A basic Post-Graduate Degree from any recognised University of India (55% Marks or B+ Grade) and a consistently good academic record.
(b) One year Diploma or Degree in Yoga with atleast 50% Marks or B+ Grade.
(c) Ph.D. Degree in Yoga.
(d) 10 years research-cum-teaching experience in Yoga.

DESIRABLE

Successful guidance at Doctorate level.

2. READER

ESSENTIAL

(a) A basic Post-Graduate Degree from any recognised University in India (55% of Marks or B+ Grade) and a consistently good academic record.
(b) Degree/one year Diploma in Yoga with atleast 50% Marks or B+ Grade.
(c) 5 years research-cum-teaching experience in Yoga.

DESIRABLE

Ph.D. Degree in Yoga.

3. LECTURER

ESSENTIAL

(a) A basic Post-Graduate Degree from any recognised University in India (55% Marks or B+ Grade) and a consistently good academic record.
(b) **A Degree/one year Diploma with atleast 55% Marks or B+ grade in Yoga.**
(c) **2 years research-cum-teaching experience in Yoga/in allied subject of Yoga.**

DESIRABLE

Ph.D. Degree in Yoga.

AGE LIMIT

The applicants who have completed 60 years of age, need not apply.

C. NON-TEACHING POSTS

Sl. No.	Name of the Post and Department	Scale of Pay	No.of Posts	Classification of Vacancy
1	2	3	4	5
1.	Director of Physical Education (Re-advertised)	Rs. 700-40-1100-50-1600/-	1	SC-1
2.	Physical Culture Instructor (Re-advertised)	Rs. 700-40-1100-50-1600/-	2	SC-1 ST-1
3.	Medical Officer (University Health Centre)	Rs. 1200-60-1500-75-2175/-	1	SC-1
4.	Glass Blower (Chemistry Department) (Re-advertised)	Rs. 750-25-800-30-950-50-1200-60-1500/-	1	SC-1
5.	Pharmacist (University Health Centre) (Re-advertised)	Rs. 550-20-650-25-800-30-950-50-1050/-	1	SC-1
6.	Store-Keeper (Bio-Science Dept.)	Rs. 675-25-800-30-950-50-1200-60-1320/-	1	ST-1
7.	Laboratory Technician (Bio-Science Dept.) (Re-advertised)	Rs. 630-20-650-25-800-30-950-50-1200/-	1	SC-1
8.	Laboratory Technician (Physics Department) (Re-advertised)	Rs. 630-20-650-25-800-30-950-50-1200/-	1	ST-1
9.	Workshop Mechanic (Physics Department)	Rs. 750-25-800-30-950-50-1200-60-1500/-	1	SC-1
10.	Library Assistant (University Library)	Rs. 490-15-550-20-650-25-800-30-950/-	1	ST-1
11.	Photographer-cum-Artist (Bio-Sciences Dept.)	Rs. 675-25-800-30-950-50-1200-60-1320/-	1	ST-1

Note

The candidates who had applied earlier for the post of Director of Physical Education in response to the advertisement dated 11-3-83 need not pay the Registration Fee. However, they should apply in the prescribed form.

The general qualifications prescribed for the above posts are as follows:

1. **Director of Physical Education**

(i) A Master's Degree in Physical Education (High Second Class) with Diploma in Sports Coaching from a recognised Institution.

OR

A Master's Degree in Physical Education (High Second Class) with a record of having represented his University at the Inter-University Level/State in the National Championship.

(ii) Experience in Organising Games and Sports (as exemplified in handling of about half a dozen teams in a year in his institution and their participation in University/Inter-Collegiate Tournaments) and ability to encourage mass participation in Games and Sports.

2. **Physical Culture Instructor**

Essential

(a) A University basic Degree (General)

(b) Bachelor's degree in Physical Education (Technical)

3. **Medical Officer**

M.B.B.S.

Desirable

Post-Graduate Degree in Medicine.

4. **Glass Blower**

A pass in S.S.L.C. with five years experience in Glass Blowing in a recognised Science Department/Research Institution/University/Industry.

5. **Pharmacist**

Diploma in Pharmacy.

6. **Store-Keeper**

A Graduate who has studied Chemistry, Botany and Zoology as optional/major subjects.

7. **Laboratory Technician (Bio-Sciences Department)**

A pass in S.S.L.C., either with a Diploma or two years Certificate Course as Laboratory Technician **(Life Science)** from a recognised Institution.

8. **Laboratory Technician (Physics Department)**

A pass in S.S.L.C. either with a Diploma or two years Certificate Course from a recognised Institution in the field of **Electronics.**

9. **Workshop Mechanic**

A Diploma in Mechanical Engineering from a recognised Institution/University.

10. **Library Assistant**

Essential

(a) P.U.C. or equivalent qualification.

(b) Diploma in Library Science from a recognised Board/University.

11. **Photographer-cum-Artist**

Essential

A Diploma in Photography with one year experience OR five years experience in Photography with basic education of S.S.L.C.

Desirable

Knowledge of Photomicrographic technic, drawing, painting and retouching.

Age Limit

The age limit prescribed for non-teaching posts is a minimum of 18 years for all categories and a maximum of (a) 38 years in the case of persons belonging to Scheduled Castes, Scheduled Tribes and Backward Tribes; (b) 36 years in the case of persons belonging to any of the Backward Communities or Backward Castes (c) 33 years in the case of others as on the last date fixed for the receipt of application.

The age restriction may be relaxed by the University (Board of Appointments) in special and deserving cases for reasons to be recorded in writing.

General Conditions and Instructions

1. Knowledge of Kannada is essential. Candidates without knowledge of Kannada, if appointed are required to pass in Kannada Language Examination of the Certificate Course level conducted by a competent authority within a period of 2 yars from the date of appointment.
2. Candidates selected will be appointed on probation for a period of **2 years.**
3. While recruiting to the posts mentioned above, if candidates belonging to the reserved categories who are suitable for appointment are not available for being selected for vacancies reserved for such categories, such vacancies shall be filled by selection of candidates, belonging to other categories as per Government Orders in force from time to time. Applicants belonging to SC/ST/BCM/BCT/BT/BSG are required to produce Certificates in the prescribed form issued by the authorities empowered to issue such Certificates in support of their claims alongwith their application. Such certificates should not have been issued carlier than one year by the competent authorities, empowered to do so.
4. The prescribed application forms in eight sets may be obtained from the Registrar, Mangalore University, Light House Hill, Mangalore-575003 on payment of the following fee:

	Registration Fee Rs.	Application Fee Rs.	Total Rs.
1. Professors & Readers	20.00	2.00	22.00
2. Lecturers	15.00	2.00	17.00
3. Non-Teaching Posts	10.00	2.00	12.00

5. The amount may be paid in the Office of the Finance Officer, Mangalore University, OR by Crossed Demand Draft drawn in the name of the Registrar, Mangalore University, payable at Mangalore OR by Crossed Postal Order payable to the Registrar, Mangalore University, Mangalore. **Cheques and Money Orders or payments in any other forms will not be accepted under any circumstances.**
6. The requisition for the application forms alongwith the Receipt or Demand Draft or Postal Order for having paid the Registration and Application Fees should be sent to the Registrar, Mangalore University, **alongwith a self addressed envelope of the size 38cm × 15cm stamped with Postage Stamps of Rs. 3.70 for TEACHING POSTS and Rs. 4.10 for NON TEACHING POSTS.** The requisition application must contain the category of posts to which the candidate intends to apply. Separate requisition shall be sent alongwith the registration fee etc., in case a candidate intends to apply for more than one post.
7. Applications in the prescribed form with complete sets giving all the particulars together with the requisite enclosures should be sent to reach the Registrar, Mangalore University, Light House Hill, Mangalore-575003 on or before **15th March, 1985.** Incomplete applications and applications without true copies of Marks Cards, Degree Certificates and other Certificates are liable to be rejected. The applications in contravention of the above conditions will be summarily rejected and no correspondence in this behalf will be entertained.
8. Those who are employed should send their applications through their employers so as to reach this office on or before the last date fixed. Applications received after the due date are subject to acceptance or rejection at the discretion of the University.
9. All envelopes/covers should be superscribed with the following: "APPLICATION FOR THE POST OF——————————"
The candidate should affix latest passport size photo on one of the first set of application.
10. Canvassing directly or indirectly will disqualify the candidates.
11. It is open to the University to fill or not to fill the posts now advertised. Registration and Application Fees once remitted are not refundable. **Separate applications alongwith the enclosures are required to be submitted in case a candidate intends to apply for more than one post.**
12. No T.A./D.A. will be admissible either for attending the interview or for joining the posts, if selected.

Dr. K.M. Kaveriappa
REGISTRAR

GUJARAT VIDYAPITH

AHIMSA, THE ATTRIBUTE OF SOUL

"We have to make truth and non-violence, not matters for mere individual practice, but for practice by groups and communities and nations. That at any rate is my dream. I shall live and die in trying to realize it. My faith helps me to discover new truths every day. **Ahimsa is the attribute of the Soul, and therefore to be practised by everybody in all affairs of life."**

—M.K. GANDHI

THE ENCYCLOPAEDIA OF AHIMSA (NON-VIOLENCE)

Co-ordinator : Prof. RAMLAL PARIKH
Vice-Chancellor

Shri Jamnalal Bajaj Institute of Studies in Non-Violence, a multi-disciplinary research institute of the Gujarat Vidyapith have undertaken to prepare—a first of its kind, 'ENCYCLOPAEDIA OF AHIMSA (Non-Violence)', giving a comprehensive documentation of the evolution of Non-Violence from the earliest times to the contemporary age. It is scheduled **to be published on 18th October, 1985** in commemoration of the 65th anniversary of the founding of the Gujarat Vidyapith by Mahatma Gandhi.

The encyclopaedia will be published in three volumes, each of about 500 pages of Royal Octavo size. The first volume will feature the views of world renowned scholars on the Philosophical foundations of Non-violence along with abstracts of researches in this field. Articles of outstanding authors on various aspects of Non-violence in its relation to Science, Technology, Ethics, Social Sciences, Society etc, will be included.

The Second volume will contain an annotated glossary of all words and names related to studies in Non-violence with authentic account of programmes and movements of all types of application & practice of Non-violence in individual and social life.

The final volume will contain a chronology of the evolution of Non-violence along with a comprehensive bibliography of books and journals.

This publication will fulfil a long-felt need for the access of all information & understanding on Non-violence, to facilitate studies in Non-violence in global perspectives and help disseminate ideals and programmes of Non-violence throughout the world.

* For understanding multitudinal dimensions of Non-violence.
* For comprehension of facts on practice of Non-violence-Societal as well as Individual.
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This will be an indispensable reference work.

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It is imperative to practice Non-violence in social, economic, political and spiritual life to realise enduring peace.

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From Untruth to Truth
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From Death to Life

Non-violence is the only Continuum of Mankind.

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Rs. 1500/- or US $150/- (For three Volumes)

Last date of receiving advance payment as Pre-publication price will be 31st May, 1985.

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Rs. 2000/- or US $200/- (For three Volumes)

Publication will be sent by surface mail to persons/institutions abroad. But extra US $10 will have to be remitted if delivery required by air-mail.

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University News

MARCH 1, 1985

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From L to R : Mr. B. Pratap Reddy, Vice-Chancellor, Dr. Shankar Dayal Sharma, Governor of Andhra Pradesh and Prof. V. Kurien, Chairman, National Dairy Development Board, at the Convocation of the Andhra Pradesh Agricultural University.

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Editor :
M. S. RAMAMURTHY

GRI's Seminar on Educational Policy

Inaugurating the Seminar on Educational Policy on February 19, 1985 at Gandhigram, Dr. Madhuri Shah, Chairman, University Grants Commission called for a complete change in the educational system and said that there should be coordination between science and technology and development in human resources. Reorientation of the educational policy should begin from school level.

"Unless you start with foundation level it is very difficult to achieve the targets. It is much easier to change the minds in schools than in colleges", she said.

Dr. Shah also felt that vocationalisation was necessary but at the same time there should be a monitoring and evaluation unit to avoid under-employment and unemployment.

Dr. M. Aram, Vice-Chancellor, Gandhigram Rural Institute, who presided, said educational policy should be more development oriented. Population education and population control should be a major component of the educational policy. Each college should adopt a block as its service area and each university must look upon the district in which it was located as its service area.

Dr. Aram pleaded for a National Staff College for University teachers. A Media Centre to prepare software particularly relating to rural development may be started in Gandhigram, he felt. High priority should be accorded to peace education and disarmament education.

Dr. B. Sheik Ali, Vice-Chancellor, Mangalore University, who participated in the Seminar, said students must be taught about freedom struggle.

Prof. Habib Mohammed, Vice-Chancellor, University of Kerala, presided over one of the sessions. In all ten papers were presented at the seminar on different aspects of education. These included: "Reshaping Educational Policy", "Educational Policy Reforms," "Place of Extension in our Educational Policy with special reference to university education", Planning for Universalisation of Elementary Education in India" etc.

New Forum for Literary Interaction

The Language Departments of the University of Bombay which were till recently scattered over, are now under one roof, namely, the Ranade Bhavan on the Vidyanagari campus. The acadamic staff in these departments have ample opportunities to meet and discuss topics of common interest. This leads to the formation of the 'Consortium of the Bombay University Language Departments' better known by its acronym, COBULD. It was recently inaugurated by the Octogenarian Prof. R.B. Joshi, an eminent author knowing several languages.

The language departments concerned are : English, Gujarati, Hindi, Kannada, Marathi, Sanskrit, Sindhi and Urdu. Other departments, viz., Foreign Languages, Linguistics and Comparative Literature are also in the fray.

The basic philosophy of COBULD is that subjects in language courses and literary researches are increasingly becoming interdisciplinary, encompassing various social themes, religion, arts, archaeology and even applied psychology. Apart from this cross-culture, Sanskrit, Arabic and English continue to wield their influence on modern Indian Literatures. So there would be many points of common interest or problems to share amongst the staff of the Language Departments.

The main advantages of this interaction are said to be planning of teaching courses, collaboration in seminars and workshops, and more importantly, harnessing a comparative approach to literary studies.

Correspondence Education : Need for Reorientation

Sangram Singh Rana*

Correspondence education has proved to be an effective answer to the problem of providing educational facilities to all seakers of higher education, without causing much burden on already over strained economic resources, of the third world countries. Though a recent phenomenon yet correspondence education has made its presence felt in the field of university education in India. Correspondence educating processes are integral to the total contrived educating processes of society yet tools and techniques are not identical. These are very different from the formal system which is class room oriented. The use of communication media has brought a fundamental change in the teaching-learning process. The shift from spoken word is a structural change in the traditional teaching. This asks for constructing teaching paradigm which is of heuristic value. The lack of eye ball to eyeball teaching and the absence of black board which has been mesmerizing billions of pupils for centuries, make it all the more important to develop such instructional methodology which can prove an effective alternative to the conventional teaching strategies. At present correspondence education in our country is based on a tripod : Lesson—Response sheet—Personal Contact Programme.

Lesson : The acquisition of knowledge from text material constitutes one of the major tasks of student of higher levels of education. In correspondence educating process the reliance on written word is greater. Here lesson-material in print form—is the back bone of the system. Thus learning in the correspondence education course will largely depend on how well the student can read, comprehend and retain information from the lesson. A writer of correspondence courses can do his job better if he understands his clientele.

Writing for Whom : While writing for correspondence courses, cultural background of the distant learner has to be considered. Correspondence clientele differs widely in social background, aspirations, age, learning style and learning environment convenience. Correspondence student does not operate in vaccum, but his association with correspondence education institute is only one of the dozens associations he has in daily life. Besides, the lesson writer should also be aware of the problems of the correspondence student e.g. :

(i) Lack of environmental contiguity instil a feeling of isolation among the correspondence students.

(ii) The student who returns to education after a gap of several years is fearful of not doing well.

(iii) He does not know how to combine studies with the demands of his family and friends.

(iv) In the absence of face to face teaching, motivation, a very important component of education, apparently is missing.

Motivation/expectation relationship : 'Motivation is a hypothetical construct. It is not directly measureable and it is something we infer'. We can consider motivation at another level, at the level of student who is interested in a correspondence course because he or she perceives it as relevant to his or her personal or professional development. Now, while writing for a distant learner a writer should write in a style which enhances the interest of the student. The content in the lesson should be explained and elaborated in a way that everything fits well in students' knowledge structure. He should also keep in his mind the psychology of learning—if learning are too elementary students will not feel and challenge and if learning are too complex frustration may be an end result. So the writer of the correspondence lesson must maintain a balance in motivation/expectation relationship.

Response Sheets : Response sheet makes correspondence education two way education. Known by different nomenclatures it is appended to either every lesson or with the number of units desired by an institution of correspondence courses. In the developing world where hardware has a marginal role to play in the system of correspondence education, response sheet is the only channel of communication in between teacher and student. To know that student has received and perceived the instructional material sent to him or her this assignment forms an important link. This makes the job of the lesson writer all the more technical. So, while devising questions for the response sheet he should keep the **functions** of this assignment in mind. Response sheet should give not only an effective feed back and help in 'controlling the progress' of the student but it should also be able to increase 'analytical faculties' of distant learner. On one hand the assignment should be used as a channel for individualizing teaching while on the other it should enable students to tackle examination paper.

Evaluation: Evaluation of Response Sheet makes the teacher of correspondence courses more than a lesson writer. While evaluating Response sheet he is communicating with, supporting and motivating the learner, as well as assessing the work. Through

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**Geography Department, Correspondence Courses, Panjab University, Chandigarh.*

this assignment teacher can provide the correspondence student needed security, a supportive environment and encouragement.

Personal Contact Programme : As is clear from the nomenclature, personal contact programmes are designed to provide a purposeful intellectual confrontation in between faculty and students. These programmes in their basic dioination are short spell of class room teaching. During these programmes correspondence teacher discusses the problems with students which they are having with their lessons. In fact lectures delivered during personal contact programme are supplementary to the printed material already despatched to the students.

The preceding account reveals that to operate in the correspondence education mode, exposes the real academic worth of the academic. The writing of instructional material for correspondence courses requires course teacher to be aware of needs and wants of distant students. It is also expected from him that he knows characteristics of text, such as cohesion and organisation, which influences learning. Lack of knowledge and methodology may conceal the essential contents capacity of the academic. This may give rise to all sort of confusion. If the material given in lesson is not up to date and revised, then, this may result in higher rate of attrition.

Text information is interpreted, organized and retrieved in terms of existing knowledge structure. If the correspondence course writer is not aware of the knowledge structure of the student, contents of the lesson may not be able to motivate him or her. Similarly if the text is not potentially meaningful, students development will stop at non-semantic level. Besides being a lesson writer correspondence course teacher is also an evaluator. He is to evaluate response sheet and assess performance of the distant learner. Through this channel he motivates student and has an effective control on the growth of the student. Response sheet is a meaningful tool for developing a rapport with the students, to mitigate his feeling of isolation. He can do so, only when he is conversant both with the lesson and student.

Thus we find that role perception of a teacher in correspondence courses is different from a teacher engaged in conventional teaching. But irony is that correspondence system of education in our country is based on an assumption that a teacher engaged in formal teaching is *ipso facto* an effective correspondence course teacher. Even U.G.C. seems to be toeing this line. The problem with this system of education is that it is being managed and guided by those persons who are trained in conventional system of education. The suggestion to run correspondence courses with the help of skeleton staff, to get lesson written from outside, to engage teachers from local colleges for personal contact programme, to get correspondence lessons reviewed by those who are engaged in conventional teaching, sample checking of response sheets by out siders, the supremacy of formalists in decision making bodies, all shows that the assumption—conventional teacher is an effective correspondence teacher—is an untenable assumption. This makes situation worse. Firstly correspondence courses were started without proper training of the teachers and then the opportunity to develop a correspondence methodology is being denied by conventionalists. Their concept of correspondence education is limited to the Quantitative expansion of education without providing any infrastructure. Even casual reference of correspondence courses is made in terms of 'profit' and 'loss'. The basic spirit of correspondence education—to take education to the doorstep of under-privileged who were unable to pursue—educational penchant because of economic pressures. Geographical location or who could not go beyond primary or matriculation levels because of social stigma—is altogether missing in this approach. It is the time now to do re-thinking. Correspondence education system can come up to the expectations of Indian masses if it is allowed to grow as an independent system. The approach to consider it as an appendix of conventional education and tether it with classroom is hampering its growth. Concludingly it can be said that if correspondence teaching is to play its legitimate role in Indian situation there is a dire need of reorientation. □

UNIVERSITY NEWS

University News is published weekly by the Association of Indian Universities to promote awareness of contemporary thinking on higher education. Views expressed in the journal are those of the authors and do not reflect the policies of the Association.

Articles are invited by the Editor on matters relating to University education. Manuscripts (in duplicate) should be sent to Editor, University News, Association of Indian Universities, AIU House, 16 Kotla Marg, New Delhi-110002. They should be typed on one side of the paper, double spaced with wide margins. Each article should be accompanied by a summary/abstract of 100/150 words on a separate sheet.

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Values in Text Books: A Research Perspective

U.S. Chaudhuri*

There is great deal of concern today with the problem of values. The most vital aspect of the structural stability of any society is the values by which it lives. These values evolve and change slowly but constitute, at any given time, a bedrock foundation for an educational programme. It is a truism to say that the values of any culture automatically frame the values of educational system that exists to serve the culture. However, any educational enterprize endowed with inherent power achieves the full realization of that power only to the extent it translates cultural values into a meaningful educational totality of many parts, and into a meaningful curriculum as the most important part.

Kneller (1965) observes that a culture's values are its ideals of what is worth striving for. In Inlow's (1972) view values are the determiners in man that influence his choice in life and that thus decide his behaviour. In brief, values are not the concrete goals of action, but rather the criteria by which goals are chosen.

Text books may be looked upon as symbols of national culture and they are perhaps more revealing of national ideals and values, than anything else. If the 'liberal-democratic' framework on the one hand and the 'scientific technological' framework on the other are to serve as two major sources of values in the larger social system of India, then the educational system itself must reflect these values in practice and procedure. If we accept the goal of rational, secular democratic society based on modern technology then rationalism, secularism and equality must find a place in the substantive ideas communicated in the process of education. Minimally, these ideas must find expression and support in text books and other supplementary reading material (Gore et al, 1970).

"How far do these democratic and modern values find place in the text material?" is a question which needs study and research. In fact, this aspect of text book has not attracted the attention of educational researchers. However, very few studies have been reported in this field.

Narration and description, as value transmitteers, have important limitations. While they transmit values, they transmit them in more disguised from than does the direction or the ethical system. Hence, there is special danger that narrative may communicate selective value without the communicator or the teacher realizing this fact. Unless the teacher counteracts the influences embedded it the text, it may reinforce in pupils some values which the college or school does not consciously wish to indoctrinate.

One example of the type of research that might disclose such unintended biases is provided in a preliminary study of children's readers by a group of psychologists at Yale University (Child, Potter and Levine, 1946). They tabulated the implied values and expectations built into 914 simple narrations. These reading texts teach the child that 'effort' and 'Learning' are rewarded. The books, however, do not encourage intellectual curiosity. Characters are rewarded for asking adults for information but are punished when they try to figure out answers for themselves. In general, the books encourage children in dependence rather than independence, tell them how to win success but not how to take failure in stride; and provide models for achievement in boys while establishing a stereotype of the girl as kind but unambitious and uncreative. In view of the preliminary character of this research, it is not appropriate to recite more of its evidence as to ways in which narratives are presenting unrealistic values. The study makes clear what criticism of narrative materials the writer should make if the book is to be used in schools, and suggests a type of analysis which could profitably be extended to many other texts.

A study of 19th Century textbooks of America by Elson (1964) points out that early text-books sought to inculcate traditional values (industry, thrift etc.) Some critics of modern life and education seem to favour a return to such text-books as model.

Dhand (1967) made a value analysis of social studies textbooks (Class VII & VIII) of Saskatchewan province (Canada) to study the trends with respect to value orientation over the period of sixty years (from 1905 to 1965). This study reveals that none of the textbooks analysed shows a balanced orientation of textual material with regard to all of the eight social values chosen for study. The trend-study in value orientation of textbooks indicates that there is a greater emphasis on the values of 'power' and 'wealth' than on any other value. 'Affection', 'skill' and 'rectitude' are almost neglected.

Ehsanual Haq (1973) conducted a study to see the relactionship between the modern political values

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**Reader, Department of Education, University of Indore.*

as enshrined in Indian constitution and those incorporated into the content of school textbooks. In this study content analysis of Hindi, English, History and Civics textbooks of schools of Delhi was done. Findings of this study reveal that there is neither any pattern nor consistency in the presentation of values in the textbooks. There is an absence of relationship between the nature of value to be internalized and the mental maturity of the students. No uniformity has been maintained even within a class where students are generally of the same age group and mental level. The language books for the lower classes may be of more use for inculcating political values in students but the books for classes IX, X & XI are written entirely from literary point of view. There is, therefore, no emphasis in them on any one of the values of political modernization. Even in civics, which is supposed to promote political values, no conscious and consistent effort has been made in that direction. And there is no gradual increase in emphasis given to various political values in various subjects from classes I though XI in accordance with the principle of mental maturity.

Chaudhari & Sharma (1974) made a comparative study of values reflected in Hindi textbooks classes I through VIII prepared by the National Council of Educational Research & Training (NCERT) and the Madhya Pradesh Textbook Corporation. They found that in the NCERT textbooks highest emphasis has been given to 'courage and adventure' whereas in the state corporation textbooks 'patriotism' gets the highest rank. Although there is much similarity in the overall presentation of values in the two sets of textbooks, there is weak orientation to the values of 'sacrifice', 'faith in God' and 'obedience' in the NCERT textbooks. The state corporation books have weak orientation to the values of 'co-operation' and 'compassion'.

In a subsequent study of nationalized Hindi textbooks (classes I through VIII) of Madhya Pradesh, Chaudhari (1976) found that 'patriotism' 'gets highest and 'scientific outlook' lowest emphasis in the textbooks. Compassion, industry, courage and love get higher preference in the books of classes I through IV, while love, compassion, courage and equality get higher preference in the textbooks of classes V through VIII. Equality, truthfulness, humbleness, non-violence, sacrifice and liberty get moderate emphasis in the textbooks of classes I through IV, whereas cooperation, humbleness, sacrifice, secularism and international understanding get moderate importance in the books of classes V through VIII. Health, scientific outlook, secularism, justice, international understanding and simple living get the lowest emphasis in the textbook of classes I through IV. On the other hand scientific outlook, justice, simple living, non-violence and dutifulness get the lowest importance in the textbooks of classes V through VIII. The findings suggest that there is neither any pattern nor consistency in the presentation of values in the textbooks. It appears that over-concern has been shown for inculcating the value of 'patriotism' in the students of classes I through IV.

The foregoing review of researches point out to the fact that there is neither any pattern nor consistency in the presentation of values in the textbooks. There is an absence of relationship between the nature of value to be internalized and the mental maturity of the students. The textbooks almost fail to exercise a modernizing influence on the minds of the learners. A society oriented towards democratic socialism should have a balanced orientation of values. Hence, the authors, editors and publishers should make greater efforts for the preparation of more balanced value-oriented text materials. The University authorities should also pay attention to this aspect while restructuring courses, particularly the foundational ones.

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Prof. Kurien Addresses Convocation of Andhra Pradesh Agricultural University

Excerpts from the Convocation Address delivered by Prof. V. Kurien, Chairman, National Dairy Development Board, at the Andhra Pradesh Agricultural University, Hyderabad on December 15, 1984.

Convocation

"...Although I have been associated with some agricultural endeavours and enterprises, I am by no means an expert in this field. To follow the distinguished agricultural scientists and others who have addressed previous convocations of this university, causes me no little trepidation. However, to speak to those whose lives are, and will be, devoted to the agricultural growth of this country is an opportunity I cannot forego.

A convocation is an end, but more importantly, a beginning. It is, therefore, a time when anticipation of the future is more important than reflection on the past. Those of you who will today receive degrees have completed what is but the first — and with due respect to your administration and faculty — perhaps the least important part of your education. Your degree certifies you as one of our nation's educated elite; how you use what you have learned, and how you build upon it, is of far greater importance and will be the more difficult challenge. Your future examinations will be set not by the university, but by our nation's farmers who, today, comprise our nation's greatest asset, one whose potential is yet to be realised.

A few weeks ago, in his first address to the nation, our new Prime Minister said that our first priority is the eradication of rural poverty. Those in this audience who recall the early days of independence will well remember that then, too, eradication of poverty in our rural areas was the nation's foremost goal. Yet, poverty persists. While progress has been made at the fringes of the problem, today nearly half of our rural population remains poor. And because they are poor, they lack the resources, the education, the energy and the will to escape from poverty.

Why, we must ask, has the problem of poverty proved so intractable? Its elimination has been the first national priority for nearly forty years. Poverty and the problems associated with it have been studied and analysed by our finest economists, sociologists and social scientists. Our best scientific talent has been deployed to develop the technologies that will liberate our rural poor. Our plans, and the resources that flow from them, have focussed on amelioration of rural poverty. Yet the problem remains.

I would draw your attention to a rather striking paradox. Considerable and justifiable pride is taken in the great strides made by our agricultural sector in the last two decades. As recently as the mid-1960s many were convinced that as a nation, we could not feed ourselves. Last year we produced a staggering 150 million tonnes of foodgrains; this year we shall equal or exceed that record, continuing on a path of progress that has few parallels. Yet, while production leaps, poverty persists. The rural poor — those who produce the cereals, the oilseeds, the cotton, jute, pulses and spices — show little gain from their efforts. Is it not curious that in a year of record production, farmer income has not increased dramatically; is it not equally puzzling that consumer prices have increased, increases that tax that other class of underprivileged, the urban poor?

There is an unfortunate explanation for this paradox: exploitation. It is the traders and the middlemen who have been the major beneficiaries of our green revolution. Let us, however, give them their due. They have created marvels of vertical and horizontal integration to finance, procure, process and market a major portion of our nation's agricultural production. Consider, if you will, only the logistics of moving cereals, vegetables, fruit, and oilseeds to Hyderabad, not only from the far reaches of Andhra Pradesh, but from every corner of India. One can only admire such a system. And, one would admire it were it not for the fact that in the absence of control and competition, it exploits not only both producer and consumer, but operates with margins that allow for substantial inefficiencies and waste.

No doubt some of you have asked yourself the question I will now pose: how can such a situation persist in a democratic society? Is not one of democracy's merits its capacity to redress such problems of exploitation? The answer, whether fortunately or unfortunately, is not a simple yes. Democratic decision making must weave its way through a web of conflicting demands. Decisions in a democracy must, of the nature of the system, respond to pressures rather than simply resolve issues on their merits. It is an unfortunate fact that on issues that affect them, our rural poor exert little or no pressure. Weighed down by the problems of day-to-day life, even of survival, they are no match for the pressures of the urban elite, the traders and middlemen.

Let me degress for a moment to tell you something of may own experience for it offers both an illustration and perhaps the outline of a solution.

It was just at the dawn of our Independence that I found myself — much against my will I might say — posted to the little town of Anand in Kaira District, Gujarat. It was there that I got mixed up with some rather remarkable people who were grappling with this very problem of exploitation. Kaira District produces milk, far more milk during the flush season than can be consumed there, or in the surrounding areas. And so, the milk was purchased by traders and a private dairy who would send it to Bombay. The profit, needless to say, went to the dairy — not to the farmers. Shri Tribhuvandas K. Patel and his colleagues believed that through cooperation the farmers of Kaira District could strengthen their position. As you know, they were proved right. But, it was not without a struggle and not without learning that our efforts could not succeed unless we became involved not only in trading, but in supporting production, in processing, and in the marketing of dairy products. We also learned that the rural poor could command a major enterprise and, in so doing, earn a far greater share of the consumer's rupee. But to do so, the farmer's power had to be linked with the expertise of professional management, management that would represent their interests effectively, persistently and with integrity.

The success of our efforts in Kaira District soon led neighbouring areas of Gujarat to seek our help in organising their dairy farmers into cooperatives. As the successes began to multiply, the then Prime Minister, Shri Lal Bahadur Shastri, decided that the same approach should be the basis of national dairy development policy and, at his instance, the National Dairy Development Board was established. This led to Operation Flood.

What is Operation Flood? It is not simply a dairy development programme. It is the organisation of 10 million farmers, giving them a platform to articulate their needs, to demand a better place under the Indian sun. The basis of Operation Flood is giving power to the producer by combining their energies and great resources with the talent and commitment of professional management. It is therefore appropriate that some have dubbed Operation Flood the "White Revolution", for it is a revolution — not only in production, but in creating a constituency of farmers who, served by professional managers, can exert pressures in their own interest thereby participating effectively in our democratic process. It is no accident that the incomes of dairy farmers have increased. They are organised and they have a voice. We can also take some pride in the fact that because their organisations are managed professionally, and because they are efficient, price increases to the consumer have been moderate.

This revolution has not taken place without opposition. It has been opposed by some politicians, by some bureaucrats, by middlemen merchants and traders. Yet this coalition of vested interests who don't want the poor to emerge, who feel threatened when the poor gain access to the stage of democratic decision-making, has failed. They have failed because of the very fact that the farmers have organised. And they have failed because the salvation of India is that in high places, in all spheres, there are people of good intentions, of goodwill and of ability. Such people have not only welcomed the poor to the arena of democratic decision-making, but have actively supported and encouraged this process.

The Government of India, beginning with Pandit Jawaharlal Nehru, has encouraged what we call the Anand Pattern of cooperative development. As I mentioned, it was Shri Lal Bahadur Shastri who was instrumental in creating the National Dairy Development Board so that the Anand Pattern could be extended to every part of the country. It was Smt. Indira Gandhi whose encouragement and support was vital to Operation Flood and, very recently, to creating an alternative structure for vegetable and fruit marketing on the Anand Pattern. And it was Shri Morarji Desai who saw the Anand Pattern as the way to replicate the success of Operation Flood with oilseeds and edible oil.

Whether with milk, with vegetable and fruit, or with oil organisation of farmers into cooperative enterprises is the first step toward releasing our rural population from the bonds of poverty. By their command over procurement, processing and marketing, the farmers ensure that their share of the consumer's rupee increases, providing them with a remunerative and reliable return on their investment. Increased and stable income creates the conditions for further investment in production and productivity, an effort supported by the cooperatives which provide the services and inputs the farmers require. When the cooperatives achieve an influential share of the market — as they have in milk and dairy products — this forces the trade to conform, to compete with fair prices to the farmer and to the consumer. Most important, the cooperative enterprise, linking farmers locally, regionally, and nationally empowers the rural poor, giving them a strong voice in our democratic process.

It has probably occurred to you that if cooperatives are a solution to rural poverty, why does poverty persist? After all, today in India we claim to have one of the world's largest cooperative movements — more than one hundred and fifty thousand cooperative organisations exist in our rural areas.

To understand why cooperatives have not succeeded in reducing poverty we must understand a bit of history. Cooperation has existed in our country from times immemorial. But the cooperative movement organised by the British, and ruled by a Registrar, was alien to our culture and our genius. With Independence, cooperatives, along with Panchayats and village schools, were seen as one of the three pillars of development. But, while political power had been transferred, the approach to cooperation remained the same. We forgot the words of Gandhiji who said: "Cooperation, which is rooted in the soil, always succeeds". What we promoted were cooperatives rooted in the infertile soil of Government Departments of Cooperation, created simply as an extension of the bureaucracy, a soil in which they might exist, but where they would never flourish. We ignored the lesson of cooperative pioneers such as P.L.N. Raju and Kashinath Rao Mukpalkar who built cooperatives from the bottom up, empowering the farmer, not the bureaucrat.

These and other pioneers of the Indian cooperative movement, men of great vision, saw that cooperatives could transform our rural areas, empowering our farmers and allowing them to direct their own destinies. They were convinced that cooperatives would strengthen democracy at the grassroots as our rural people learned to wisely use the power of one man with one vote. They believed that economic justice would be advanced by the lessons of cooperation where rich and poor Hindu and Muslim, Brahmin and Harijan unite for the common good.

Increasingly these dreams have been dashed against the rocks of politics, bureaucracy and disregard for the fundamental principles of cooperation. Cooperation, a people's movement, has been officialised, bureaucratised, politicised and neutralised. It is not necessarily wrong for a political leader to serve as a cooperative leader; what is wrong is when such leaders put political interests above the principles and purposes of cooperation. Only if cooperative leaders behave with decency, honesty and integrity can cooperation succeed as a powerful instrument of constructive change in our villages. As Mahatma Gandhi once said, "the cooperative movement will be a blessing to India only to the extent that it is a moral movement". While we can be encouraged by the example of Andhra Pradesh — which I understand is in the process of revising cooperative law to return cooperatives to their members — its example is but a small glimmer of hope on an otherwise dismal horizon.

Those of you who leave the Andhra Pradesh Agricultural University today will soon be in the front lines in the war against rural poverty. Your struggle will be a peaceful one, but one of great importance to the future of our nation. Some of you will be involved in the research and technologies that increase productivity; others will extend to the farmers of this State the information and inputs they need to exploit that research. Some of you will become involved with the procurement and marketing of agricultural commodities. A few of you, in some years, will be responsible for the policies and strategies of agricultural development in Andhra Pradesh and the nation.

The task you face is a difficult one. The pace of change is slow and there will be many obstacles and failures. You will discover that not all will welcome progress; there are those who will oppose you. You will need courage, the courage to be patient and to recognise that your work is not that of a day or a year, but of a lifetime. You will need the courage to recognise a problem or a failure as the opportunity to learn. You will need the courage to continue to be a student and the humility to recognise the unlettered villager as the wisest of teachers.

I hope that there will be those among you who will be inspired by the cooperative movement as I have been, who will share the vision of those of us who believe that if we are to eliminate poverty it must be, can only be, through cooperation. There is, after all, no greater responsibility, no greater challenge, than to be the employee of our nation's farmers. It is in this role that your education, your skills and your commitment can be harnessed to the immense strength of our rural population in the common effort to eliminate not only poverty, but to build a strong, proud and just nation". □

Correspondence Course in Evaluation Methodology & Examinations

(Basic Level, Intermediate Level & Advanced Level)

Applications are invited from College/University teachers for admission to three Correspondence Courses in Evaluation Methodology and Examinations at Basic Level, Intermediate Level and Advanced Level, each of six months duration (1st April, 1985 to 31st October, 1985). Basic Level course is offered from Regional centres at Delhi, Bombay and Madras. A personal "Contact Programme" for three days is planned and prescribed books will be supplied to every candidate.

Requests for prospectus and application forms accompanied by a crossed Indian Postal Order for Rs. 5/- drawn in favour of Secretary, Association of Indian Universities and a self-addressed stamped (Re. 1/-) envelope should reach the undersigned. The last date is **15th March, 1985** for non-sponsored candidates and **30th March, 1985** for sponsored candidates. For sponsored candidates, universities/institutions can pay the course fee and travel expenses for contact programme from UGC unassigned grants.

Prof. V. Natarajan
Project Director (Exams.)
Association of Indian Universities
AIU House, 16 Kotla Marg,
New Delhi-110002.

NEW COURSES AT JNU

The Jawaharlal Nehru University has decided to offer two new programmes from the ensuing academic year beginning in July next. The two programmes are the two-year M.Sc degree in Bio-technology and three-year Master's degree in Computer Applications (MCA).

The M.Sc. Programme in Biotechnology has been developed to meet the growing demand for trained manpower for meaningful biotechnology activity in the country. The programme is designed to expose the students to recent developments in the area of genetic engineering and biotechnology and their exploitation towards industry, agriculture and medicine.

Jointly sponsored by the National Bio-technology Board, Department of Science and Technology and the UGC, the courses in biotechnology will cover physical, chemical and mathematical aspects of living systems, genetics, molecular biology, tissue culture, recombinant DNA technology, Enzymology and enzyme technology, immunotechnology, etc.

Of a total of 140 odd Universities in the country, JNU is one of the 7 Universities identified to initiate instructional and research programme in this field.

The three-year Master of Computer Applications (MCA) Programme will be offered in the School of Computer and Systems Sciences of the University. The Programme is designed to provide necessary theoretical background and practical experience which would enable the students to adequately equip themselves for Computer Applications in Science and Engineering. It will meet the manpower requirements in the field of data processing and train them in the area of designing, development, implementing and maintaining computerised information systems to aid management in industries. It is jointly sponsored by the U.G.C. and the Department of Electronics.

Both the Programmes are open to the graduates under the 10+2+3 pattern of education. For M.Sc. Programme in Bio-Technology, graduates in Physical Sciences, Biological Sciences, Agriculture, Veterinary Sciences or graduates in Engineering/technology (B.E./B.Tech) or Medicine (M.B B.S.) are eligible to apply. For MCA, graduates having Mathematics and/or Statistics as one of the elective subjects are eligible.

Admissions to both the programmes will be made on the basis of the All-India Competitive Entrance Examination to be held on May 24, 25 and 26 at 21 State centres all over the country.

Indian Society for the Study of Pains meets at BHU

The Vice-Chancellor of Banaras Hindu University, Prof. Iqbal Narain said that ways and means had to be found out in order to ameliorate the sufferings of millions in the Third World Countries. Referring to the poor quality of the life of the Third World Countries he said in terms of medical facility it was quality which matters and not the hands, and only by a band of dedicated people the problem would be solved.

Prof. Narain was inaugurating the 1st Annual Conference of Indian Society for Study of Pains hosted by the Deptt. of Anaesthesiology, Institute of Medical Sciences, B.H.U. He said Pain was associated with every illness and temporary relief was always provided but what mattered was a complete cure. Right type of ecology and input for health environment was required.

He noted that for the conquest of pain in general and pain of the cancer in particular, Extension Education has to be launched to nab the very causes at earliest stages.

The President of the Society, Dr. A.Lal, in his address underlined for a concerted effort by physicians in many disciplines of medicine and also research scientists to provide succour to sufferers from all kind of pain. He noted with satisfaction that advances in medicine have now made it possible but society had also to come up with resources to afford necessary organisational infrastructure for the same. He said a region-wise survey to assess the magnitude of the problems in the country by the help of governmental and non-governmental agencies, creating an intense awareness through coordinated efforts, the hospice concept and few other programmes are being chalked out by the society. They would also consider specific suggestions.

Ex-Director of the Institute and Emeritus Professor, Dr. K.N. Udupa, while inaugurating Scientific session stressed for the traditional and Yogic methods as measures for pain relief for their consideration.

More than a hundred delegates from all parts of the country and delegates from WHO (Geneva), UK, USA, etc participated.

III All India Managerium meets at AMU

Mr. L.K. Jha, Chairman, Economic Administration Reforms Commission inaugurating the Third All India Managerium on "Corporate Democracy—The Issue and Dimensions" in the Kennedy Hall Auditorium of the Aligarh Muslim University, said that the late Prime Minister Mrs. Indira Gandhi in 1981, which she had declared as year of productivity, had made certain changes in the direction of management of different sectors of the economy and added that the young Prime Minister, Mr. Rajiv Gandhi, soon after assuming charge of his office, declared that his Government would endeavour to ensure basic growth by introducing necessary economic reforms and that "the results would take precedence over procedures".

Mr. L.K. Jha said that there were four Cardinal principles to manage different sectors of the economy, namely, persuasion, temptation, restriction and intervention. He pointed out that these were the four operative principles which ensured good performance in management of economy sectors—both public and private.

Mr. Jha underlined the need to control weaknesses in the economic management to ensure acceleration of the pace of the country's economic growth.

In his keynote address Mr. Haksar, Chairman Emeritus, Indian Tobacco Company observed that for appropriate economic growth, a national style in management needed to be developed.

Mr. Haksar pleaded for support to the P.M.'s policies and opined that politicisation of policy planning should not be allowed at any cost.

The Vice-Chancellor of Aligarh Muslim University, Mr. Saiyid Hamid in his welcome address threw light on the progress made by the University.

Professor Najmul Hasan, Chairman, Department of Business Administration, A.M.U. said that the purpose of the present managerium was to provide a forum to different sections of opinions and different groups of interest to examine the issue of corporate democracy in all its facets and take stock of its efficacy in running the government bodies corporate in the right way and for efficiency in achieving the objectives of the economy as well as ensuring the quality in delivering the goods and services to the community at large.

Earlier Mr. L.K. Jha released a Souvenir titled "Managerium" which was brought out by the Department of Business Administration of the University.

A large number of experts on Business Administration drawn from different parts of the country presented their papers in the Managerium.

World's first Italian-Hindi manual

The Vice-Chancellor of Jawaharlal Nehru University, Prof. P.N. Srivastava, released recently a book "Italavi Bhasha Pravesh" which is said to be the world's first Italian-Hindi Manual. Speaking on the occasion, Prof. Srivastava stressed the need for having similar books for learning various foreign languages.

Present on the occasion was Dr. Malik Mohammad, President of the Nagri Lipi Parishad, who briefly mentioned about the activities of the Parishad in publishing books for learning various Indian as well as foreign languages through the medium of Devnagri script.

The Italian-Hindi Manual written by Dr. Madan Lal, Assistant Professor of Italian in JNU is the first publication of its kind in the world in which pronunciation of Italian words is provided in both Roman as well as Devnagri Script.

The book has been published by the Nagri Lipi Parishad.

IIT, Bombay gets Vincent Bendix Award

The Student Branch Chapter of IIT-Bombay of the IEEE Computer Society has won the Vincent Bendix award this year. This award, instituted by the Institution of Electrical and Electronics Engineers (IEEE), USA is given to research oriented team projects which are innovative in nature and beneficial to the society in general. Around 7 branches, all over the world, are selected for this award every year.

A group of 4 student members, Shailesh Hegde, Sanjeev Naik, Vibhu Mittal and Varun Nagaraj won this award for their proposal—'A microprocessor based ultrasonic eye for the blind'. They intend to develop a microprocessor based sonar like device for the blind to help them to move about unaided. They are now working to develop a prototype of this device under the guidance of their counsellor, Prof. S.S.S.P. Rao.

COSIST assistance to BHU's Physics Department

Department of Physics, Banaras Hindu University has received a financial assistance of Rs. 72.25 Lakhs under Committee on Strengthening of Infrastructure in Science and Technology (COSIST) Programme of the University Grants Commission. This assistance has been provided by the Commission to the department for strengthening of its infrastructure for Post-Graduate Teaching and Research.

Rs. 8.00 Lakhs has been earmarked for the Post-Graduate education while Rs. 64.75 lakhs has been provided for strengthening research in the areas of Physics of Materials with particular reference to Synthesis, Crystal Growth and characterisation of Crystals lasers and Molecular photo Physics and also in Theoretical Physics.

Out of this assistance, Rs. 58.50 lakhs will be spent on purchasing of various equipments including a Electron Microscope, TEM with STEM, EBIC, EDAX and ELS attachment Rs. 30.00 lakhs. Rs. 35.00 lakhs had also been provided by the U.G.C. under the special assistance programme to the department.

Workshop on distance teaching and self-learning at Poona Varsity

The University of Poona has started Distance Education Scheme since June, 1984 to help those who, for certain reasons, cannot attend colleges during day hours. The University has also decided to discontinue the external system progressively. Under this scheme (DEC) at present there are five study-centers located at S.P. College, N. Wadia College, Pune; H.P.T. College of Arts, Science and Commerce, Malegaon with a strength of about 1,000 students.

The study-texts have been prepared for students studying under this scheme. As a programme of internal assessment they have to complete four assignments per term and have to take mid-semester examination. University had organized workshops for consultants and study-text book writers. It was acutely felt that the teachers working at different study-centres should be oriented with the philosophy and functioning of Distance Education. Keeping this in view, a workshop for study-centre teachers was organized on 10th, 11th and 12th of December, 1984 at the Poona University. In all 50 teachers had participated in the workshop.

Prof. V.G. Bhide, Vice-Chancellor, Poona University had inaugurated the Workshop. Prof. R.G. Takwale, Ex-Vice-Chancellor, University of Poona was the chief guest. Both of them emphasized the need of Distance Education and Learning in the context of increasing number of students in every university and the use of modern educational technology.

Distance Education is a step towards Open University; and hence a seminar on 'Bridge Courses' was also arranged. It is contemplated that the candidates without any pre-requisites could be admitted directly to F.Y.B.A./B.Com./B.Sc. Courses provided they pass the bridge courses prepared by the University.

Seminar on planning and designing research projects at Indore

The Department of Teacher Education, NCERT sponsored a seminar on "Planning and Designing Research Projects" in the Department of Education, Devi Ahilya Vishwavidyalaya, Indore. The seminar was conducted between 4th to 9th February, 1985. The seminar aimed at reviewing research trends in different areas and preparing research projects for different purposes. Twenty-five participants from colleges of Education, and University Departments of Madhya Pradesh, Uttar Pradesh, Maharashtra, Haryana and Himachal Pradesh participated in the seminar. Research studies in the areas of

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MINISTRY OF EDUCATION

SPANISH GOVERNMENT SCHOLARSHIPS 1985-86.

Applications on plain paper, as per prescribed format, are invited from Indian Nationals, for the award of four scholarships in spanish language. The salient features of the offer are as under:—

1. **Qualifications** : Master's degree in Spanish language.
2. **Experience** : Preferably two years' teaching/Practical Training/research experience as on 1-4-1985 after the prescribed qualification. Candidates already registered for Ph.D. in an Indian University will be given preference.
3. **Level of Study** : Ph.D. level research/training.
4. **Duration** : One academic year commencing from October, 1985.
5. **Value** : 48,000 pesetas p.m.
6. **Age** : Not exceeding 33 years as on **1-10-1985** (Relaxation in age upto two years will be given in the case of SC/ST candidates).
7. **Passage cost** : Passage cost from India to Spain and back will be born by the candidates or his/her employer/sponsor. Subject to the availability of funds, the passage cost may be met by the Government of India in accordance with the rules of eligibility etc.

Note :

(i) Equivalent foreign degree will be considered. (ii) Candidates, who have already been abroad for study/research/training either on scholarship or on their own are eligible to apply only if they have been in India for at least three years after their return from abroad. (iii) Candidates should have adequate knowledge of geographical situation and cultural heritage of India, and of the donor country. (iv) Applications of candidates who are abroad will not be considered. (v) Application should be accompanied by Postal Order of Rs. 5/- (Rs. 1.25 p. only in the case of SC/ST and other Backward classes candidates). (vi) Applications which do not contain Postal Order will not be considered. (vii) Candidates NOT fulfilling the requisite qualifications need not apply.

8. **Last date for receipt of application** : The application should reach Dr. R.L. Phutela Assistant Educational Adviser (ES.5), Ministry of Education, Room No. 517, 'B' Wing Shastri Bhawan, New Delhi by **15th March, 1985**, positively.

APPLICATION FORMAT

1. Name of the Scholarship Scheme
2. (a) Subject
   (b) Sub-subject
3. Name of the Candidate
   (in Block letters, with full mailing address)
4. Date of birth & State to which the candidate belongs
5. Whether a member of SC/ST or a tribal or **aboriginal** community, If so, give full particulars
6. Academic record starting from high school/ Higher Secondary

Name of the University/ Board/Institution	Examination(s) passed	Year of passing	Division/ Class with position, if any (In case no Division/Class is awarded & only grading is done the conversion formula adopted may be mentioned)	%age of marks obtained and position, if any	Subject taken
1	2	3	4	5	6

7. Details of Professional Practical Training & Research Experience, specifying the period & number of papers published, previous employment with name & date of employment ,if any.
8. Nature of the present employment with date of appointment, designation & the name and address of the employers.
9. Have you been abroad. If so, give full particulars of the country and the period; also mention the year of return to India.
   (a) Are you married or unmarried
10. Proposed programme of study/research/training
    (i) the work in which engaged at present;
    (ii) nature and programme of study/research desired;
    (iii) future plans/prospects after the proposed studies/research; and
    (iv) how are these related to the technical or economic development of India?
11. Crossed Postal order of Rs. 5/- (Rupees one and paise twenty-five only in the case of SC/ST candidates etc.) may be attached with the form with passport-size photograph (one copy).

Note :

Employed persons must send their applications fully-sponsored by the employers however, advance applications will be considered **provisi y** pending sponsorship by employers.

Signature of candidate)

Place :

Date :

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Universalization of Education, Models of Teaching, Vocationalization, Multi-media Approach, Management Styles, etc. were prepared by the participants. The Resource Persons, namely, Prof. J.N. Joshi (Chandigarh), Prof. Y.P. Agrawal (Kurukshetra), Prof. L.C. Singh, Prof. M.K. Raina, Prof. Kuldip Kumar, Dr. Satvir Singh (New Delhi) addressed the seminarians and supervised the proposals.

XRD facility at Gauhati University

The Department of Science and Technology, Government of India, has sanctioned a sum of Rs. 24.5 lakhs to the Gauhati University for setting up sophisticated X-ray Diffractometer and X-ray Fluorescence facilities.

The instruments will be installed soon at the University Science Instrumentation Centre as a regional facility for the scientific workers in the North Eastern Region.

11 girls' colleges in Bihar selected for PG teaching

The State Government of Bihar has selected 11 girls colleges in different parts of the State for setting up postgraduate centres in various arts and science subjects. Postgraduate teaching in Economics, Political Science, History, Hindi, English, Botany, Zoology, Physics, Chemistry and Mathematics are to be introduced in these selected colleges from the current academic session. The colleges selected for postgraduate teaching are : Magadh Mahila College (Patna University), Gautam Budh Mahila College, Gaya (Magadh University), M D.D. Mahila College, Muzaffarpur (Bihar University), Maharani Kalyani Mahila Mahavidyalaya, Darbhanga (L.N. Mithila University), Sundarwati Mahila College, Dumka (Bhagalpur University), Chaibasa Women's College, Ranchi Women's College, Jameshedpur Women's College, K.B. Mahila College, Hazaribagh and S. L. N. T. Women's College, Dhanbad (Ranchi University).

International youth year celebrations at BITS

National Service Scheme (NSS) of Birla Institute of Technology and Science (BITS), Pilani organised a Youth Week from 19th to 26th January in connection with the International Youth Year, 1985.

It screened many knowledge provoking newsreels. They also organised drawing competition and essay competition in this connection. Topics for Drawing Competition were : 'Role of the Youth in Rural Development; Role of the Youth in Social Development; Role of the Youth in the National Development; and Role of the Youth in the National Integration. The topic for 1500 words essay was "The Role of the Youth in the National Development".

Latest Releases from the House of IIP

Catalogne of the Coins, by CHARLES J. RODGERS: (in 4 Parts) ;

PART I : The Coins of the Mogul Emperors of India; 1985 (c. 1893); vi, xx, 273p.; Index of Mint Towns

PART II : Miscellaneous Muhammadan Coins; 1985 (c. 1894); viii, 220p.; Appendices

PART III : Graeco-Bactrian and other Ancient Coins; 1985 (c. 1895); ii, viii, 162p., viii p.; Appendix; Monograms; Pali Legends

PART IV : Miscellaneous Coins; 1985 (c. 1895); x, 161p.; Appendices 26cm.; Rs. 1000 $200 (per set in 4 Parts)

Economic Development & Structural Changes : An Empirical Investigation, by G.S. KAINTH & R.S. BAWA; 1985; xii, 154p.; 8 Figs.; 24 Tables; Index; Statistical Annexures, 15 Tables of Statistical Annexures; 26cm.; Rs. 180 $36.

Manipur Tribal Scene : Studies in Society and Changes, by RAJAT KANTI DAS; 1985; xii, 106p.; 4 Figs.; 14 Illus.; 6 Tables; Bibliography; Index: Rs. 150 $30.

Moghul Monuments in the Punjab & Haryana, by SUBHASH PARIHAR: 1985; xvi, 64p.; 76 Illus. (16 Coloured & 60 Black & White); Appendix; Bibliography; Glossary; Index; Rs. 350 $70.

Rice Production—Potential and Constraints : A Case Study of Productivity Backward Region, by G.S. KAINTH & P.L. MEHRA: 1985; xv, 144p.; 13 Figs.; 28 Tables; Bibliography; Glossary; Index; 17 Statistical Annexures; 6 Tables of Technical Annexures; 26 cm.; Rs. 180 $36.

Tax Ethics—Unaccounted Income Or Black Money—The Norm of the Day: Some Tax Reforms, by O.P. CHOPRA; 1985; viii, 119p.; 21 Tables; Bibliography; Index; 26cm.; Rs. 130 $26.

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News from Agril. Varsities

55 lakh tonnes paddy target fixed

Addressing a two-day Workshop of Agricultural Officers held at the Punjab Agricultural University recently, Mr Sukhjit Singh Sandhu, Director of Agriculture, Punjab said that 55 lakh production target for paddy and 2 lakh tonnes each in case of pulses and oilseeds had been fixed for the ensuing kharif season. He further said that Punjab achieved a record production of 50.5 lakh tonnes of paddy and 12 lakh bales of cotton during 1984. The contribution of Punjab in paddy to the National Pool was 56 per cent. The increase in cotton could be possible owing to effective plant protection measures recommended by the scientists of the PAU. Mr Sandhu stressed the need for increasing the productivity and lowering the cost of production so that the farmers could get remunerative price for their produce. Farmers should also be educated to use farm inputs judiciously to cut down the cost of production, he said.

Dr Sukhdev Singh, Vice-Chancellor of the PAU, while inaugurating the workshop said that 20 per cent increase in paddy production in a single year was an all time record in the world history of agriculture. Similarly, 15 per cent increase in cotton was also a record. He said that further increase in farm production was possible with proper use of farm inputs and adequate plant protection measures.

The Vice-Chancellor cautioned that the deficiency of micro-nutrients in the soil was becoming alarming and needed immediate attention of the scientists. He told that 70 per cent of the area under sugarcane was under COJ 64 variety. In order to further increase sugarcane production this variety should be kept disease free for a longer time.

Dr Khem Singh Gill, Director of Research of the University said that with the exception of a few isolated problems in one or the other crop, the overall situation with respect to the production and per acre yield during kharif 1985 especially in paddy and cotton was highly satisfactory. Dr Gill suggested that to obtain further higher yield of paddy, disease and insect resistant varieties should be sown in time and plant population of 33 plants per square metre should be maintained. Excessive use of nitrogen should be avoided and zinc deficient soils should be corrected by applying 40 kg zinc sulphate per acre to the rice nurseries. Dr Gill told that with the adoption of Partap Navjot and Ageti 76 varieties of maize, the area under this crop had considerably increased.

Dr Gill told that a new tractor-mounted sprayer had been developed by the Engineers of the PAU which would help reduce dependence on aircrafts needed for aerial spray on cotton. Similarly, with a little modification the existing combines could be used for maize shelling, he added.

Dr A.S. Atwal, Director of Ecology of PAU said that 50 per cent increase in the crop yield was possible by adopting suitable plant protection methods. Dr Atwal urged that ear-cockle disease of wheat and flag-smut disease of paddy and wheat should be controlled effectively to increase the yield. Dr Atwal disclosed that a ground receiving station was being set-up at PAU

NEHRU MEMORIAL MUSEUM AND LIBRARY

Fellowships in Modern Indian History and Social Sciences

The Nehru Memorial Museum and Library offers Fellowships in the range Rs. 2000 to 2500, Rs. 1500 to 2000 and Rs. 700 to 1600 per month plus allowances at Central Govt. rates for research in 'Modern Indian History and Contemporary Studies'. Scholars applying for Fellowships, may work on the nationalist movement, or on Modern Indian History, or on contemporary Indian society. The fellowships are for three years renewable for another two years. These are open to historians and social scientists. Fellowships in range Rs. 2000-2500 are open to scholars of distinction, who have made significant contribution to knowledge and have experience of conducting and guiding research. Fellowships in range Rs. 1500-2000 are open to scholars of proven ability, with publications, and experience of guiding research. Fellowships in range Rs. 700-1600 are open to scholars with good academic record and research experience, and already in possession of Ph.D. degree.

The Nehru Memorial Museum and Library reserves the right of publication of research papers and monographs prepared by Fellows during the tenure of their fellowships. The Fellows will be based in Delhi. The Selection Committee reserves the right to recommend award of fellowships in the range Rs. 2000-2500 to a scholar who may not have formally applied.

Those who wish to be considered should send a note not exceeding 1000 words on the project proposed to be undertaken alongwith the following information to Director, Nehru Memorial Museum and Library, Teen Murti House, New Delhi-110011, within one month of publication of advertisement: (1) Name (2) Address (3) Date of Birth (4) Academic Record—from High School Examination onwards with class obtained in each examination (5) Details of post-graduate work and list of publications with copies (6) Details of how employed so far; and (7) Names and Addresses of three referees. Scholars should apply through proper channel.

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for more accurate weather forecast.

Rural fair at Jagatpur

Dr. K.S. Nandpuri, Director of Extension Education of the Punjab Agricultural University said that the time had come when the farmers of Punjab and especially the small and marginal farmers should adopt diversification of agriculture since the cultivation of cereal crops had become less profitable. He further said the farmers should take up fruit and vegetable growing and seed production, bee-keeping and mushroom growing. He told that the Extension Wing of the University organised different short-term training courses in these skills for the farmers on the campus.

Dr. Nandpuri was addressing a large gathering of farmers at Baba Ram Chand Memorial Rural Fair held at Jagatpur in Jalandhar district recently. Apart from an agricultural exhibition, competitions in bullock-cart races and persian wheel running were the highlights of the Fair. Dr. Nandpuri also gave away the prizes to the winners of different competitions.

Dr. Ranjit Singh, Joint Director, Communication Centre of PAU said that the farmers should adopt the latest farm technology generated by the PAU to increase their crop yield.

News from UGC

INSAT-1B Programme of UGC

Between 1st and 16th March, 1985, the following schedule of telecasts on higher education through INSAT-1B under the auspices of the University Grants Commission will be observed. The programme is of one hour duration every day from 12.45 p.m. to 1.45 p.m. (Repeated from 4 p.m. to 5 p.m.) and will be available on the TV network throughout the country. For the viewers in Delhi and surrounding areas, it is telecast on the second channel.

1.3.85

"Food—will there be enough"
"Fourier Transform and its Application in Physics"
"Lasers in Welding-1"

2.3.85

"How to Plan and Conduct a Research Project"
"Images of Einstein"
"Blue Green Algae"

3.3.85

No Telecast

4.3.85

"Green House Effect"
"The First Man and His Environment"
"Gypse-gypsy"

5.3.85

"Electromagnetic Induction"
"Laser in Welding-II"

6.3.85

No Telecast

7.3.85

No Telecast

8.3.85

"Mobile Creches"
"Of Mind and Matter"
"High Above the Dust"

9.3.85

No Telecast

10.3.85

No Telecast

11.3.85

"Oral Rehydration Therapy"
"Save the Forest"
"Erosion Control"

12.3.85

"Pesticides—The Environment"
"Yakshagana"
"A Desert—An Arena of Life-I"

13.3.85

"Introduction to Computers"
"Precision & Optical Instruments"
"Learning a Trade"
"A change"

14.3.85

"Indian Development-II"
"Vocational Training"
"You Can be Cured"
"In the Service of Mankind"

15.3.85

"Wind Energy"
"Yoga in Orthopaedic Disorders"
"A Desert : An Arena of Life II"

16.3.85

"Population Growth in India"
"Biogas"
"Homoeopathy"
"Harvesting the Sea"

Sport News

Combined Universities Rowing Team

The following University Rowing Team participated in the Invitation Regatta Competition at Chandigarh on Feb. 23, 24, 1985. The team will also participate in the National Regatta Championship to be held on May 30, 1985 at Madras :

(1) K.V. Balachander (Capt.) (Madras Univ.); (2) Sanjeev Kesu (Madras Univ.); (3) G. Narayanan (Madras Univ.); (4) M.S. Ashwin (Anna Univ.); (5) Ashok Khosla (Anna Univ.); (6) K.V. Sundaram (Anna Univ.); (7) Ramesh Gurusami (Anna Univ.); (8) Bharath Vijayan (Madras Univ.); (9) Sandeep Somani (Madras Univ.) (10) Khaizer-A-Shariff (Anna Univ.).

The team was selected by the Selection Committee from the University Teams which participated in the Inter-University Regatta Competition at Madras from 10th to 12th Feb. 1985.

The Directorate of Marketing and Inspection of the Ministry of Agriculture & Rural Development is celebrating its Golden Jubilee in 1985 and shall be giving cash prizes to three best essays in English and Hindi on the following subjects :

(1) हमारे जीवन में एगमार्क पदार्थों का महत्व
Role of Agmark Products in Our Daily Life
(Open to all individuals)

(2) आन्तरिक तथा निर्यात व्यापार में एगमार्क का योगदान
Agmark as an aid to Internal & Export Trade
(Open to all including Trade Associations)

The rules for the competition are as under :—

1. The competition is open to all Indian nationals.
2. The employees of the Directorate of Marketing & Inspection (D.M.I.) and their families and direct relations shall not be entitled to participate.
3. The articles should be neatly typed in Hindi or English in 1½ space and should not exceed 1000 words and be submitted in triplicate.
4. All the entries should be in double cover and addressed to Agricultural Marketing Adviser to the Govt. of India, D.M.I., C.G.O. Building, N.H. IV, Faridabad-121001. The envelopes should be superscribed as 'Essay Competition'.
5. There is no entry fee and any number of entries can be sent.
6. All the articles received shall be the property of the D.M.I. and shall not be returned to the authors and the D.M.I. has the right to publish them.
7. The winners of the competition shall be invited to Delhi to attend a function and shall be paid first class railway return fare only by the shortest route. They shall, however, make their own arrangement for stay and local transport. Winners of the essay each in Hindi and English will be given cash prizes as under :—

Essay Competition

First	**Rs. 5000/-**
Second	**Rs. 3000/-**
Third	**Rs. 2000/-**

8. There shall also be certificate for each award.
9. Each article shall be judged by an independent committee consisting of the eminent persons and its decision shall be final.
10. The intending competitors may like to get in touch with the 'State Marketing Departments, Offices of the D.M.I. located in State capitals etc. or refer to the quarterly Journal Agricultural Marketing etc. to get more information about AGMARK and other activities of the D.M.I.
11. The Committee has the right to reject any entry and reserves the right not to award cash prizes for any or all categories.
12. The last date for receipt of the article is the 30th March, 1985. Entries received thereafter will not be entertained.

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G. B. PANT UNIVERSITY OF AGRICULTURE & TECHNOLOGY

PANTNAGAR 263145 DISTRICT NAINITAL, U.P.

ADMISSION NOTICE

A competitive Entrance Examination for admission to the First Year of the following Bachelor's, Master's & Ph.D. degree programmes will be held on Sunday the 5th May, 1985 from 10.00 A.M. at Agra, Allahabad, Delhi, Hyderabad, Lucknow, Pantnagar, Roorkee and Varanasi Centres.

A—Bachelor's Degree Programmes

Programmes	**Minimum Eligibility Qualifications**
1. B.Sc. Ag. & A.H.	Pass in Intermediate with Agriculture/Mathematics/Biology from U.P. Board, Allahabad, or equivalent examination.
2. Bachelor of Fisheries Science	—Do—
3. B.V. Sc. & A.H.	Pass in Intermediate with Biology/Agriculture from U.P. Board, Allahabad or equivalent examination.
4. B.Sc. Home Science (for girls only)	Pass in High School Science or Arts from U.P. Board, Allahabad or equivalent examination.

NOTE—Candidates appearing in the above Boards' examinations in 1985 are also eligible to appear in the entrance examination provided their results are declared by 5th July 1985, otherwise they will stand disqualified.

Admission to B.Tech. Programme in Civil, Electrical, Mechanical, Agricultural, Electronics & Communication, Production and Computer Engineering of this University will be made through a Joint Entrance Examination to be conducted by the Coordinator, Admission Committee, Motilal Nehru Regional Engineering College, Allahabad, U.P. from whom the application form and Brochure can be obtained by intending candidates.

Maximum Age Limit : 22 years on 30th November 1985 (3 years relaxation for candidates belonging to Scheduled Castes/Scheduled Tribes/Backward Classes).

B—Master's Degree Programmes

Subjects : Plant Breeding-20, Plant Pathology-10, Horticulture-10, Agronomy-20, Soil Science-20, Entomology-12, Agricultural Economics-12, Rural Banking & Agricultural Economics-10, Animal Breeding-10, Dairy Husbandry-5, Poultry Husbandry-5, Animal Nutrition-10, Food Technology-10, Agricultural Communication & Extension-10, Plant Physiology-6, Microbiology-6, Biochemistry-8, Environmental Science-6, Agricultural Statistics-5, Physics-8, Mathematics-6, Vety. Bacteriology-3, Vety. Pathology 4, Vety. Pharmacology-2, Vety. Anatomy-4, Vety. Hygiene & Public Health-3, Vety. Parasitology-4, Vety. Physiology-4, Vety. Surgery-6, Vety. Medicine-4, Vety. Gynaecology & Obstetrics-4. **Home Science** : Foods & Nutrition-8. Clothing & Textiles-4, **Engineering** : Structural Engineering-10, Hydraulic Engineering-10, Design & Production Engineering (Mech)-5, **Agricultural Engineering** : Process & Food Engineering-10, Irrigation & Drainage Engineering-10, Farm Machinery & Power Engineering-10, Soil & Water Conservation Engineering-6.

Eligibility Qualifications : Bachelor's degree conforming to the relevant Subject-group with 55% marks or above in aggregate or an equivalent OGPA from a recognised University, and 33% marks in the entrance examination separately in (1) Aptitude Test, and (2) Subject Matter Test/Skill Test. For details, please see Information Brochure.

NOTE : Those who are appearing in the Bachelor's degree examinations of different Universities in India can also appear in the above entrance examination provided that their results are positively declared by 5th July 1985 for the purposes of admission in 1st trimester 1985-86, otherwise they will be considered for admission in the IInd Trimester 1985-86 only starting in November 1985 subject to availability of seats and merit position, and their degree examination result being declared positively by 30th September, 1985.

C—Ph.D. Programmes

Subjects : Plant Breeding-6, Plant Pathology-8, Soil Science-8, Agronomy-10, Animal Breeding-3, Animal Nutrition-2, Animal Physiology-3, Horticulture-4, Agricultural Economics-6, Entomology-5, Plant Physiology-2, Food Science & Technology-2, Biochemistry-2, Microbiology-2, Vety. Anatomy-2, Vety. Pathology-2, Vety. Parasitology-2, Vety. Microbiology & Public Health-4, Vety. Medicine-2, Vety. Pharmacology-2, Vety. Surgery & Radiology-4, Physics-4, Civil Engineering-4, Electrical Engineering-2, Agricultural Engg : Process & Food Engineering-5, Farm Machinery & Power Engineering-2, Irrigation & Drainage Engineering-2, Soil & Water Conservation Engineering-2.

Eligibility Qualifications : Master's degree conforming to the relevant Subject-group with 55% marks or above in aggregate or an equivalent OGPA from a recognised University and 50% marks in the Subject Matter Test of the Entrance Examination. For details, please see Information Brochure.

NOTE : The candidates who are appearing in the Master's degree examinations of different Universities in India can also appear in the above entrance examination provided that their results are positively declared by 30th September 1985. The selected candidates for Ph.D. programme will be required to join the University in the IInd Trimester 1985-86.

Separate provision exists for the Junior/Senior Fellowship Holders of the ICAR/CSIR/UGC, provided such candidates qualify in the entrance examination and the fact of having been selected for the Fellowship is intimated atleast a week before the date of entrance examination.

In-service candidates sponsored by the ICAR/Govt. of India/Development Departments of State Governments/other Indian Universities/Staff of G.B. Pant University of Agriculture & Technology, will be considered under 'Sponsored Category' and will not be required to appear in the entrance examination.

Printed Application Forms prescribed separately for Under-graduate, Master's and Ph.D. programmes, and costing Rs. 10.00 each with Information Brochure, can be obtained on request from the Registrar (Admissions) by sending a crossed Bank Draft for Rs. 10.00 in favour of G.B. Pant University of Agriculture & Technology, on State Bank of India or United Commercial Bank, Pantnagar Branch, along with a self-addressed envelope of 28 cm x 13 cm bearing postage stamps of Rs. 3.00 by unregistered parcel, or may be obtained on cash payment at the Counter. Cheques/Money Orders/ Postal Orders shall not be accepted. The programme for which the Form is required must be written in BOLD LETTERS on the self-addressed envelope.

Last Dates for Receipt of Applications : Upto 20th March 1985 till 5.30 P.M. with fees of Rs. 50.00 (Rs. Fifty only) for all Centres, and from March 21 to April 5, 1985 till 5.30 P.M. with a late fee of Rs. 20.00 more in addition to the prescribed fee of Rs. 50.00 for Pantnagar Centre only.

O.S. Misra
REGISTRAR

GUJARAT VIDYAPITH

AHMEDABAD-380014

PUBLICATIONS

Appropriate Technology

1.	Adatia R D., Science & Technology for Rural Society	Rs. 7.00
2.	Gregg R.B., Preparation for Science (Out of Print)	Re. 0.75

Bibliographies

1. Bibliography of Articles on Indology in the felicitation Volumes.
2. Bibliography of Books and Articles on Science and Ahimsa.
3. Bibliography of Selected Books and Journals on Peace and Non-violence.
4. Bibliography on World Education.
5. Catalogue of Non-Book materials in the Gujarat Vidyapith Library.
6. Catalogue of Reference Works in the Gujarat Vidyapith Library.
7. Bibliography of dissertations of Gujarat Vidyapith Library.
8. Documentation of Source Material on Population Education.
9. Gandhiji's Ideas on Education: A Select Bibliography of Books and Articles.

English Prose and Poetry

1. Armstrong : Education for Life
2. Poetical Selections
3. Gujarat Vidyapith : Readings in English Prose.

Indian Economics

1. Coomarrappa J.C., Economic Survey of Matar Taluka

History and Culture :

1.	Betai Ramesh, Gita and Gandhiji	Rs. 8.00
2.	Desai Morarji—View of the Gita	Rs. 8.00
3.	Parikh Ramlal—Concept of Indology; by Ramlal Parikh and Rasesh Jamindar	

Language

1. Di Bona : Joseph E. Language Change & Modernisation

Peace & Non-violence

1.	Divakar R.R.—Social virtues in Gandhian Concept of Ahimsa	Rs. 2.50
2.	John Galtung—Struggle for Peace	Rs. 25.00
3.	Perspective of Peace Research	Rs. 10.00
4.	Vasto Lanza del. Pilgrimage to Non-violence	Rs. 6.00

Tribal Research

1.	Fischar Eberhard—Mogra Dev : Tribal Crocodile God; by Eberhard Fischer and Haku Shah	Rs. 15.00
2.	Fischer Eberhard—'Vetra Ne Khambha'; Memorials for the Deal; by Eberhard Fischer and Haku Shah	Rs. 15.00
3.	Lal R.B.—Block level Planning for full Employment; Sagbara; By R.B. Lal and Bharti Desai	Rs. 40.00
4.	Naik T.B.—Saharias	Rs. 25.00
5.	Shah Vimal Community ancestor Worship by Vimal Shah	Rs. 10.00

AIU Library & Documentation Services

One of the important functions of the Association of Indian Universities is to act as a clearing house of information on higher education in the country. Towards this end the AIU Library is engaged in collection building and developing instruments for the dissemination of research information. Over the years a valuable collection of books and documents on different aspects of higher education has been acquired.

The Library has also developed Bibliography of Doctoral Dissertations as an effective tool in the dissemination of research information. Retrospective bibliographies covering the period 1857-1970 and 1970-75 were the first to appear. Effective 1975, however, the bibliography is issued annually in two volumes. One volume deals with Natural and Applied Sciences while the other records doctoral degrees awarded in Social Sciences and the Humanities. In addition to the normal bibliographical details like the name of the Research Scholar, the title of the thesis, years of registration for and award of the degree, and the name of the University accepting the thesis for award of a doctoral degree, the bibliography also gives name and complete address of the supervising teacher and an availability note that seeks to inform whether a copy of the dissertation is available for consultation and use in the University Library/Department or Registrar's Office.

The columns 'Theses of the Month' and 'Research in Progress' are intended to cut out the time lag between the receipt of information and its inclusion in bibliography. Such Universities as are not sending us regular information in respect of Doctoral Theses accepted and research scholars enrolled are welcome to make use of these columns.

The Library is situated at 17-B, Indraprastha Marg, New Delhi-110002. It is open from 10 a.m. to 5 p.m. Monday through Saturday except Second Saturday.

RESEARCH IN PROGRESS

A list of Research Scholars Registered for Doctoral Degrees of Indian Universities

SOCIAL SCIENCES

Sociology

1. Draxe, Prabhakar Bharamu. *The dange dhangars of Kolhapur District : A sociological study.* Shivaji U, Kolhapur. Dr. M.J. Kashalikar.

2. Geetha, R.S. *Blue colar employment and changing status of women.* U Ker, Trivandrum. Dr. G. Ramachandra Raj.

3. Miriam, Mathew. *Kolhapur : A study in urban sociology.* Shivaji U, Kolhapur. Dr. R.B. Patil.

4. Presanna, M.G. *Sociological analysis of the problems and barriers in the development of disabled.* U Ker, Trivandrum. Dr. (Miss) Manu Bhaskar.

Political Science

1. Gopakumar, K. *Land reforms in Kerala : A study in policy making and execution*, 1969-1984. U Ker, Trivandrum. Dr. N. Jose Chander.

2. Nair, Rethi. *Analysis of questions in the Legislative Assembly of Kerala : Case study of Vth Legislative Assembly of Kerala.* U Ker, Trivandrum. Dr. R. Raman Pillai.

3. Pavithran, K.S. *Ideological evolution of Communist Movement in Kerala since* 1964. U Ker, Trivandrum. Dr. N.K. Bhaskaran.

4. Raju Abraham. *Role of political parties in state legislature : A comparative study of the state legislatures of Kerala and Tamil Nadu.* U Ker, Trivandrum. Dr. N. Jose Chander.

5. Retnakumari Amma, S. *Rule of Governor in State politics in India since* 1967 *with special reference to Kerala.* U Ker, Trivandrum. Dr. N. Jose Chander.

6. Sadanandan, G. *Political modernisation of Nadar community : A study of Kerala and Tamil Nadu.* U Ker, Trivandrum Dr. G. Gopakumar.

7. Suresh Kumar, B. *Party system and Indian federalism.* U Ker, Trivandrum. Dr. N. Jose Chander.

8. Thomas, Moni Susan. *Trade Union Movement in Kerala with special reference to its role in FACT: A study in political socialisation.* U Ker, Trivandrum. Dr. G. Gopakumar.

HUMANITIES

Philosophy

1. Khambata, Zarin Dara. *Dimensions of G.E. Moore's ethical theory: A critical study.* Devi Ahilya, Indore. Ku. S. Sinha.

2. Soni, Sunil. *Fredrick Nitsho ke darshan mein ishwar, manushya aur jagat sambandhi sampratyayon ke vartman sandarbh mein adhyayan.* Devi Ahilya, Indore. Dr. Benjamin Khan.

3. Vyas, Satish Kumar. *Bharatiya samaj darshan : Ek adhyayan, Raja Ram Mohan Rai, Dayanand, Gandhi aur Vinobha ke vishesh sandarbh mein.* Devi Ahilya, Indore. Dr. Benjamin Khan.

Language & Literature

English

1. Abhiyal, George K. *John Updike's art of fiction.* HS Gour, Sagar. Dr. C. Sengupta.

2. Arumugam, K. *A contrastive analysis of the phonemes and grammer of english and tamil.* HS Gour, Sagar. Dr. (Mrs.) S. Shivraman.

3. Chowdhary, Harpreet Kaur. *The epic tradition in the American novel, with reference to the Last of the Mohicans, Roby Dick, An American Tragedy and Giles Goatboy.* Pb U, Chandigarh. Dr. Kiran Sahni.

4. Giri, Ravinarayan. *A critical examination of William Dean Howells' major novels with special reference to theme and technique.* HS Gour, Sagar. Dr. Urmila Verma.

5. Jaiswal, Mini. *An assessment of Wallace Stevens as a poet.* HS Gour, Sagar. Dr. S. Shivraman.

6. Jand, Jai Gopal. *The sense of moral obligation in the fiction of Edith Wharton.* Pb U, Chandigarh. Dr. Meera Malik.

7. Khotra, Pramil. *Thomas Hardy and R.K. Narayan as regional novelists.* HS Gour, Sagar. Dr. S. Sengupta.

8. Kulbir Kaur. *Research for new religion in the later poetry, 1918-1939 of W.B. Yeats.* Pb U, Chandigarh. Dr. N.K. Oberoi.

9. Mahanti, Nirmal Chandra. *A critical study of themes and techniques in restoration comedy, with special reference to Congreve, Wycherley, Vanbrugh and Farquhar.* HS Gour, Sagar. Dr. C. Sengupta.

10. Manuel, Aniappa. *The stream of consciousness technique in the novels of James Joyce and Verginia Woolf : A comparative study.* HS Gour, Sagar. Dr. C. Sengupta.

11. Paliwal, Pradeep Kumar. *Imagery and symbolism in Hardy's major novels.* HS Gour, Sagar. Dr. S. Sengupta.

12. Piplapure, Nilima. *The art of Saul Bellow.* HS Gour, Sagar. Dr. S. Shivraman.

13. Sahu, Jyotirmaya. *Acquisition of phonological and morphological patterns in oriya and english : A comparative and analytical study in developmental linguistics.* HS Gour, Sagar. Dr. C. Sengupta.

14. Singh, Chirom Shvoton. *A study of R.K. Narayan's art of fiction.* HS Gour, Sagar. Dr. C. Sengupta.

15. Vajpai, Mridula. *Attitudes and motivation of Indian learners of english as a second language.* HS Gour, Sagar. Dr. R.S. Pathak.

16. Vijay Kumar. *English novel and the first world war : A study in theme and form with special reference to Women in Love (D.H. Lawrence) Antic Hay (Aldous Huxley) Parade's End (Ford Madox Ford), Death of a Hero (Richard Aldington)* Pb U, Chandigarh. Prof. M.L. Raina.

17. Vijay Kumar. *A critical study of imagery in Walt Whitman's poetry.* HS Gour, Sagar. Dr. Urmila Verma.

18. Yadav, Om Prakash. *Themes and technique in Manohar Malgonkar's novels.* HS Gour, Sagar. Dr. R.S. Pathak.

Sanskrit

1. Asha Lata. *Krishan Yajurvediya Taittriya Shakha ke vishesh sandarbh mein Agnishtom Somanstha ka alochnatmak adhyayan.* Pb U, Chandigarh. Dr. V.P. Upadhyaya.

2. Bakhle, Smita. *Sanskrit natya mein aharya abhinav.* HS Gour, Sagar. Dr. (Miss) Kusum Bhuria.

3. Jatinder Singh. *Evolution of the concept of bhakti in vedic literature.* Pb U, Chandigarh. Prof. Ram Gopal.

4. Neelam Rani. *Mahakavi Vasudev-krit Yudhishter Vijayam aur R. Ramsubrahmanyaya Krit Dhanarjayavijayam Mahakavyon ka tulnatmak adhyayan.* Pb U, Chandigarh. Dr. V.P. Upadhyaya.

5. Roshan Lal. *Shaktibhaderkrit Acharya Churamani ka alochnatmak adhyayan.* Pb U, Chandigarh. Dr. T.K. Sharma and Dr. V.P. Upadhyaya.

6. Sharma, Poonam. *A critical study of Ram Kavyas in sanskrit literature with special reference to Janki Haran of Kumardas.* Pb U, Chandigarh. Dr. R.K. Sharma.

7. Shroff, Archna. *Harivansh Puran ke Vishnu Puran ka sahityik adhyayan.* HS Gour, Sagar. Dr. G L. Suthar.

Punjabi

1. Brijinder Kaur. *S.S. Amol dee punjabi sahit nun den.* Pb U, Chandigarh. Dr. Dharamjit Singh,

2. Goel, Krishan Lal. *Sant Namdev ate Sant Ravi Dass dee vani da tulnatmak adhyayan.* Pb U, Chandigarh. Dr. D.P. Singhal.

3. Gursharan Kaur. *Folkloristic study of the punjabi qissa poetry relating to the period of Ranjit Singh.* Pb U, Chandigarh. Dr. Nachhattar Singh.

4. Shinder Paul. *Punjabi sufi kavita vich dukh da sankalp.* Pb U, Chandigarh. Prof. Attar Singh.

Hindi

1. Anita. *Hindi mein sanskritik nibandh: Parampara aur Vidyaniwas Mishra ka nibandh sahitya.* Pb U, Chandigarh. Dr. Jaya Prakash.

2. Chhima Devi. *Adhunikta ke sandarbh mein nayee kavita ke prabandh kavyon ka adhyayan.* Pb U, Chandigarh. Dr. (Mrs.) Santosh Sharma.

3. Gautam, Ratnesh. *Harishankar Parsai ke parvarti gadya vyangkaron ka samajbodh: Ek adhyayan.* HS Gour, Sagar. Dr. Suresh Acharya.

4. Jain, Sarita. *Narmada sambhag ke Bundeli bhashi kshetron kee sahityik parampara ka anusheelan.* HS Gour, Sagar. Dr. B. Tewari.

5. Naresh Bala. *Chanderdhar Sharma Guleri ka nibandh sahitya : Kathya avam shilpgat vivechan.* Pb U, Chandigarh. Prof. M.P. Bhardwaj.

6. Nirmal Devi. *Makhanlal Chaturvedi ka parivesh, kavya tatha vichardhara.* Pb U, Chandigarh. Dr. Laxmi Narain Sharma.

7. Satensi, Lalit Lal. *Bible ke New Testament mein samavisht Isa Masiha kee jeevani ke hindi anuvad kee bhasha ka hindi bhasha kee samridhi mein yogdan.* HS Gour, Sagar. Prof. K.K. Jain.

8. Satyavati. *Adhunik natakon mein prayogdharmita.* HS Gour, Sagar. Dr. B.D. Shukla.

9. Sharma, Ashish. *Swatantrayottar hindi prabandhkavyon mein nayika ka swaroop.* Pb U, Chandigarh. Dr. (Mrs.) Santosh Sharma

10. Sharma. Umesh Chander. *Hindi mein anyokti kavya kee prampara aur Basantsatsai.* Pb U, Chandigarh. Dr. Jaya Prakash.

11. Thakur, Narendra Singh. *Sarveshwar Dayal Saxena aur unka kavya,* HS Gour, Sagar. Dr. K.K. Jain.

12. Usha Kumari. *Bhagvati Prasad Vajpai ke katha, sahitya mein vyakti aur samaj.* Pb U, Chandigarh. Dr. Yash Gulati.

13. Veena Rani. *Adhunik hindi kavita mein algao-bodh 1950-1970.* Pb U, Chandigarh. Dr. Yash Gulati.

THESES OF THE MONTH

A list of Doctoral Theses Accepted by Indian Universities

SOCIAL SCIENCES

Library Science

1. Chopra, Hans Raj. *Librarianship as a profession : A study of socio-economic background and professional orientation of the librarians in Delhi.* Pb U, Chandigarh.

Psychology

1. Bilquis Jahan. *A study of some socio-psychological characteristics of criminals.* Mag U, Bodh Gaya.

2. Date, Sushma Vinayak. *A study of the socio-cultural correlates in relation to the development of creative ability in pre-adolescent children.* Nagpur U.

3. Nanda, Meena. *Foveal peripheral processing in short term memory.* U Delhi.

4. Prasad, Shree Kant. *A study of socio-economically advantaged and disadvantaged groups in relation to intellectual and non-intellectual factors.* Mag U, Bodh Gaya.

5. Samanta, Chittaranjan. *Role efficacy of communication media: A comparative evaluation.* Utkal U, Bhubaneswar.

6. Sudhakar, Unudurti Vindhya. *Belief and personality factors of participants: A study in an ESP/Ganzfeld setting.* Andhra U, Waltair.

Sociology

1. Gupta, A.K. *Murder and murderers: A sociological study.* U Raj, Jaipur.

Social Anthropology

1. Behera, Deepak Kumar. *Efficiency and social interactions among christians: Data from Brajarajnagar and Sambalpur Town.* Sambalpur U.

Political Science

1. Agaiah Chary, U. *Compulsory primary education in Andhra Pradesh : A policy analysis.* OU, Hyderabad.

2. Das, Sricharan. *Organisation and management of road transport stage carriage services in Orissa.* Utkal U, Bhubaneswar.

3. Ganesh Prasad. *A critical study of right to constitutional remedies with special reference to socio-economic change.* Avadh U.

4. Gurumurthy, U. *Panchayatiraj and the weaker sections: A case study of Mysore District in Karnataka.* U Mysore.

5. Khan, Jamshid Ali. *Coalitional politics in Panjab, March* 1967 *to February* 1980. Kurukshetra U.

6. Rahman, A.H. Md. Aminur. *Politics of rural local self-government in Bangladesh.* U Delhi.

7. Roy, Ashima. *Participation of the members of backward classes in the political development of Rajasthan.* U Raj, Jaipur.

8. Sarma, N.H. Sitarama. *Party politics and general elections in Andhra Pradesh: A case study of Nellore District.* 1957-67. SVU, Tirupati.

9. Shastri, Amita. *Politics of constitutional development in South Asia in the seventies: A case study of Sri Lanka.* JNU, Delhi.

10. Sinha, Shanti. *Jila prashasan per rajniti ka prabhav: Raipur Jile ke sandarbh mein.* RSU, Raipur.

Economics

1. Bhoyar, Vinayak Shankarrao. *The role of cooperative industrial estates in the development of small scale industries in Maharashtra State.* Nagpur U.

2. Chaudhury, Pradipta Kumar. *Commercialisation of agriculture in Orissa,* 1900-1930. JNU, Delhi.

3. Gupta, Uma. *Economic potentialities of the development of fodder crops in Bundelkhand.* BKU, Jhansi.

4. Hebbar, B. Gopalakrishna. *Employment generation in dryland agriculture.* U Mysore.

5. Mishra, Shibanava. *A study of the problems of rural local finances in Orissa and West Bengal.* U Calcutta.

6. Naresh Kumar. *Poverty in rural Panjab : An economic analysis.* Pb U, Chandigarh.

7. Padhi, Gopinath. *Pricing policy for irrigation water.* U Roorkee.

8. Sharma, Vijaya Raj. *A strategy for regional development planning: A case study of the Western Development Region of Nepal.* Kar U, Dharwad.

9. Singh, Phanindra Kumar. *Regional inequalities and fiscal equalisation in India.* Mag U, Bodh Gaya.

10. Somasekhar, A. *Economic conditions of tribals: A case study of Koyas of Godavari Valley.* OU, Hyderabad.

Public Administration

1. Sharma, Neena. *Political socialization and its impact on attitudinal change towards social and political systems: A case study of Harijan women of Delhi.* Mag U, Bodh Gaya.

Military Science

1. Ashok Kumar. *Bhartiya pratiraksha mein udyog ka yogdan evam mahatva.* Avadh U.

Education

1. Das, Panchanan. *Structure of cognitive abilities among normal and tribal children as a function of developmental levels.* Utkal U, Bhubaneswar.

2. Gopalacharyalu, R.V.V. *A study of relationship between certain psychosociological factors and achievement of student-teachers in teacher training institutes of Andhra Pradesh.* SVU, Tirupati.

3. Monga, Rita. *Construction and standardization of physical fitness test battery for girls students of Delhi* 10+ *to* 14+ *of age.* Kurukshetra U.

4. Panda, Santosh Kumar. *Rorschach as a tool for investigating individual differences and socio-psychological aspects of acculturation in an Indian primitive society.* Kurukshetra U.

5. Pandey, Keshav Prasad. *Prachin Bharat kee shiksha sansthaon ka adhyayan.* Avadh U.

6. Singh, Krishna. *Hindi adhigam per sanskrit ke prabhav ka adhyayan.* Avadh U.

7. Singhai, Anguri Devi. *Uchch evam nimn shaikshik uplabdhi wale balak evam balikaon mein swapratyay nirman ka tulnatmak adhyayan.* RDV, Jabalpur.

8. Sinha, Rita. *Tagore and Whitehead's ideas on education: A comparative study.* Kurukshetra U.

9. Tripathi, Vijay Krishan Datt. *A study of personality traits and some socio-economic variables associated with originality and elaboration among teacher trainees.* Avadh U.

10. Vijay Kumar. *A study of perception of classroom social climate with reference to prediction of dimensions of academic motivation of high school student.* Kurukshetra. U.

Commerce

1. Jagjit Singh. *Participative management in Indian banking with special reference to public sector banks in India.* U Delhi.

2. Kashyap, Surendra Prasad. *Bhilai Loha evam Ispat Karkhane ke shramikon kee samasyayen evam sambhavnayen.* RSU, Raipur.

3. Patnaik, Umesh Charan. *Financing of short term and medium term agricultural credit through cooperatives: An analytical study of central co-operative banks in Orissa.* Berhampur U.

4. Vatsala, R. *A study of consumer preferences, practices and problems in buying apparel fabrics in Andhra Pradesh and an assessment of the performance characteristics of polynosic blends.* Anna U, Guindy.

Home Science

1. Balwinder Kaur. *Effect of cooking on the composition of fibre in different foods.* PAU, Ludhiana.

2. Malleshi, N.G. *Studies on the malting of millet grains.* U Mysore.

Management

1. Chelapathi Rao, G.V. *Materials management in State Electricity Boards with reference to A.P. etc.* OU, Hyderabad.

2. Dharma Rajan, P.G. *A study of the cost structure of cashew industry in Kerala, Karnataka and Tamil Nadu.* U Cochin.

S.N.D.T. WOMEN'S UNIVERSITY

1, NATHIBAI THACKERSEY ROAD,
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4. Approaches to Self-reliance for Women—Some Urban Models (Popular Prakashan) Rs. 10/-
5. Women in India—a Handbook (Mimeo) Rs. 5/-
6. Women and Mass-Media (Mimeo) Rs. 3/-
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Contact

The Director,
Research Unit on Women's Studies,
SNDT Women's University,
Juhu Road, Santacruz (West),
Bombay-400 049.

1. Education of Women in India : 1950-1967—Bibliography Edited by Miss V.K. Khandwala Rs. 10/-
2. Seminar on Education of Librarianship—1966 A Report; Edited by Miss V.K. Khandwala

For further information contact :

The Librarian,
SNDT Women's University Library,
Marine Lines,
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Home-Science Publications

1. **Introductory Food Science**
   Practical aspects
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   A profile Rs. 35/-
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Pamphlets on Foods and Nutrition, Child Development, Textiles and Clothing, Family Resource Management and Home Science Extension Education are also available at nominal cost.

Please Contact :

The Principal,
S.V.T. College of Home Science,
Sir Vithaldas Vidyavihar,
Juhu Road, Santacruz (West),
Bombay-400 040.

UNIVERSITY OF DELHI

DELHI-110007

Advt. No. Estab. IV/99/85 Dated : the 20th February, 1985

Applications on prescribed form are invited for the following posts:—

Department	Designation
1. Law Centre-I	One Reader
2. Psychology	Two Readers
3. Education	Two Lecturers
4. Central Office	One Statistical Assistant
5. Geology	*One Field Attendant (Reserved for Ex-Serviceman Category)

Scale of Pay of the Posts are:

Reader : Rs. 1200-50-1300-60-1900
Lecturer : Rs. 700-40-1100-50-1600
Statistical Assistant: Rs. 425-15-500-EB-15-560-20-700

Field Attendant : Rs. 210-4-250-EB-5-270.

All posts carry D.A., C.C.A. and H.R.A. as admissible under the rules in force in the University from time to time.

Essential Qualifications for

Readership

Good academic record with at least Second Class Master's degree in a relevant subject with a doctoral degree or equivalent published work. Evidence of being actively engaged in (i) research, or (ii) innovation in teaching methods or (iii) production of teaching materials.

Five years' experience of teaching in under-graduate/post-graduate classes and/or post-doctoral research work with evidence of published work.

Note

Second Class would mean at least 50% marks in the subject or equivalent grade.

Lectureships in Education

(a) A Doctor's degree in Education or research work of an equally high standard; and

(b) Good academic record with at least second class (C in the seven point scale) Master's degree in a relevant subject from an Indian University or an equivalent Degree from a foreign University.

OR

(a) A Doctor's degree in any university discipline or research work of an equally high standard; and

(b) Good academic record with an M. Phil degree in Education (which may be acquired while in service) from an Indian University or an equivalent degree from a foreign University.

Having regard to the need for developing interdisciplinary programmes, one of the degrees in (a) and (b) above may be in relevant subjects, the other being in Education.

Provided that if the Selection Committee is of the view that the Research work of a candidate as evident either from his thesis or from his published work is of very high standard it may relax any of the qualifications prescribed in (b) above.

Provided further that if a candidate possessing a Doctor's degree or equivalent research work is not available or is not considered suitable a person possessing a good academic record (weightage being given to M.Phil or equivatent degree or research work of quality) may be appointed on the condition that he will have to obtain a Doctor's/M. Phil. degree or give evidence of research work of equivalent high standard within eight years of his appointment failing which he will not be able to earn future increments until he fulfils these requirements.

Explanation

1. For determining "good academic record" the following criteria shall be adopted:

(i) A candidate holding a Ph.D./M.Phil degree should possess at least a second class Master's degree or

(ii) A candidate without a Ph.D./M.Phil degree should possess a High second class Master's degree and second class in the Bachelor's degree; or

(iii) A candidate not possessing Ph.D/M.Phil degree but possessing second class Master's degree should have obtained first class in the Bachelor's degree.

2. Persons having secured at least 55% marks or more shall be deemed to have passed the examination in the high second class.

Statistical Assistant

Master's degree in Mathematics or Statistics.

OR

Second Class B.A./B.Sc. with Mathematics or Statistics as one of the subject with 3-4 years experience of Statistical work.

Field Attendant

Robust Constitution. Competence to walk in hilly terrain for long distance and bear rigorous field life. Minimum educational qualification : Middle Pass.

Special/Desirable Qualifications for Readership in Psychology (Ist Post)

Specialization in Industrial Psychology. Advance practical training in Industrial Organization desirable.

Readership in Psychology (2nd Post)

Specialization in Clinical Psychology. DM & SP or its equivalent or at least two years Hospital experience/training or degree in Medical field such as MBBS or MD in Psychiatry desirable.

Lectureship in Education (Ist Post)

(a) M.A. in Philosophy.

(b) Three years' Teaching Experience in a recognised teachers' training institution or in a recognised senior higher secondary school.

Lectureship in Education (2nd Post)

(a) M.A. in Psychology with specialization in Educational Psychology.

(b) Three years' training experience in a recognised Teachers' training institution or in a recognised senior Higher Secondary School.

Field Attendant

Should have some Laboratory experience.

The prescribed application forms can be had from the Information Section of the University either personally or by sending a self-addressed envelope (size 13 cm × 28 cm) with postage stamps worth Rs. 3.45 P.

The candidates will have to produce the original documents relating to their age, qualifications, experience etc. at the time of interview.

Applications (separate for each post) accompanied by attested copies of Degrees, other certificates, marksheets, published research articles, etc. should be addressed to the Registrar. However, applications for the posts marked asterisk (*) should be sent directly to the Head of the Department concerned. The last date prescribed for receipt of the applications is **13-3-1985.**

Note :

1. It will be open to the University to consider the names of suitable candidates for teaching posts who may not have applied. Relaxation of any of the qualifications may be made in exceptional cases, in respect of all the posts on the recommendations of the Selection Committee.
2. Canvassing in any form by or on behalf of the candidates will disqualify.
3. Candidates for teaching posts only from outside Delhi, when called for interview will be paid to and fro single second class rail fare.
4. The University reserves the right not to fill up any of the vacancies advertised if the circumstances so warrant.

Madan Mohan
REGISTRAR

UNIVERSITY OF DELHI

DELHI-7

Dated 16-2-1985

CORRIGENDA

Ref. Advertisement for the post of a Reader in the Department of Computer Science (Vide Advertisement No. Estab. IV/98/85 dated 9-2-1985).

The Special/Desirable Qualifications required for the said post should be read as follows:—

"Computer System Modelling and Performance Evaluation/Software Engineering/Artificial Intelligence and knowledge-based systems/pattern Recognition/Digital Image Processing/Micro-Computer Architecture and Applications/Computer Graphics."

REGISTRAR

GOKHALE INSTITUTE OF POLITICS AND ECONOMICS

PUNE-411004

Dated : 21-2-1985

Applications are invited for the following posts in the U.G.C. pay-scales.

One Professor in Economics.

Two Readers of which one with specialization in Econometrics and Input-Output Analysis; and one in Rural Sociology.

One Lecturer in Economics

Three Research Associates : One for Studies in Economics of East European Countries and Two in General Economics.

Minimum Qualifications

A higher second class at B.A. and M.A. together with Ph.D. in Economics/Sociology and experience of Research Work and Teaching.

Prescribed Application Form and further particulars may be obtained from the Registrar. Preference to candidates belonging to Backward Classes provided they have the requisite qualification. Application Form duly completed should reach the undersigned before **15-4-1985.**

N. Rath
DIRECTOR

RAVISHANKAR UNIVERSITY

RAIPUR

Pin Code No. 492010

EMPLOYMENT NOTIFICATION 1/85

Last date of receipt of application in the University Office: **11TH MARCH 1985.**

Applications are invited for appointments to the following posts in the University Teaching Departments.

S. No.	Name of Post/Subject	No. of Posts	Specialisation
1.	**Professor**		
	1. Geology	1	
2.	**Reader**		
	1. Geology	1	
	2. Geography	1	Regional Development.
	3. Psychology	1	(Managerial) Industrial/Educational Psychology
	4. Economics	1	Preference to Econometrics/Mathematical Economics/Statistics.
	5. Linguistics	1	Modern Syntactics &/or Phonology.
	6. Sociology	1	Sociological Interpretation of ancient Texts.
3.	**Lecturer**		
	1. Geology	2	
	2. Sociology	1	**Interdisciplinary research work based on sociological interpretation of Sanskrit works.**

2. **Scales of Pay**

Professor : 1500-60-1800-100-2000-125/2-2500/-
Reader : 1200-50-1300-60-1900/-
Lecturer : 700-40-1100-50-1600/-

3. Details of qualifications prescribed and the prescribed application form can be obtained from the Registrar by sending Rs. 5/- in cash crossed bank draft together with a self addressed envelop of 23×11 cm size bearing postal stamp Rs. 4.50
4. The requirement regarding minimum percentage of marks shall be relaxed upto 5% in the case of scheduled caste/scheduled tribes candidates. 15% of the post in each department are reserved for the candidates belonging to the scheduled caste and 18% for scheduled tribes candidates. If no candidates belonging to scheduled castes/tribes is found suitable for appointment, candidates belonging to the general category will be considered.
5. Applications (7 copies) with complete details will be acceptable on plain paper also. Application on prescribed form will have to be submitted at the time of the interview.
6. Qualifications etc. as on date of interview will be taken into consideration while making the selection.
7. Advance increment in the pay scales may also be sanctioned to outstanding candidates.
8. Applications on prescribed form must reach the Registrar's office on or before **11-3-1985.**

REGISTRAR

SAURASHTRA UNIVERSITY

University Campus, Kalawad Road'
RAJKOT-360005

Applications in the prescribed forms are invited for the undermentioned posts. Application forms alongwith detailed requirement of qualifications, experience and other necessary details regarding these posts will be available from the Registrar, Saurashtra University, University Campus, Kalawad Road, Rajkot-360005 on sending a self-addressed envelope of the size 23×11 cms with postage stamps worth Rs. 1.90 p. Applications (seven copies) should reach this office on or before **11-3-1985** alongwith Indian Postal Order worth Rs. 10/-.

1. **Professor of Economics-1.**

Specialization in Quantitative Techniques/Econometrics or Business Management.

2. **Professor of Home Science-1.**

Specialization in Food and Nutrition or Home Management.

3. **Reader in Statistics-1.**

Specialization in Statistics.

4. **Lecturer in Mathematics-1.**

Specialization in Functional Analysis and Operator Theory or Topology.

5. **Lecturer in Education-1.**

6. **Lecturer in Commerce-1**

In addition to the qualifications prescribed the person should be M.Com. with Accountancy. Those having C.A./A.I.C.W.A. in addition to M.Com. degree will be preferred.

7. **Lecturer in Economics-1.**

Preferably specialization in Quantitative Economics, Development Economics, Agricultural Economics, Management Economics and Rural Economics.

Pay Scale

1. Professor : Rs. 1500-60-1800-100 2000-125/2-2500.

2. Reader : Rs. 1200-50-1300-60-1600-Assessment-60-1900.

3. Lecturer: Rs. 600-40-1100-50-1300-Assessment-50-1600.

Age ordinarily not exceeding 5 years. The age, educational qualifications and experience may be relaxed in suitable cases.

V.M. Desai
REGISTRAR

JAMIA MILLIA ISLAMIA

Jamia Nagar, New Delhi-110025
Advt. No. 11/1984-85.

Applications on the prescribed form which can be had from the Registrar's Office on any day (except Sunday and Holiday) between 10.00 a.m. and 12.00 Noon or by sending a self addressed and stamped (50 paise) envelope of 10×23 cms. are invited alongwith crossed Indian Postal Order or Bank Draft of Rs. 5/- for posts carrying a maximum grade upto Rs. 400/- per month and Rs. 7/- for posts carrying a grade exceeding Rs. 400/- per month (Rs. 2/- for SC/ST candidates irrespective of grades) for the following posts so as to reach the Registrar by 1.00 p.m. on **9-3-1985.**

Ability to teach in Urdu and Hindi is a desirable qualification for teaching posts and adequate knowledge of Urdu and Hindi is essential for non-teaching posts.

D.A., C.C.A., H.R.A., P.F., Gratuity, Pension and other benefits will be given as per Jamia rules

Relaxation in any of the qualifications may be made on the recommendation of the Selection Committee in exceptional cases.

1. **Five Professors (Grade : Rs. 1500-2500) : One each in Mathematics; Mechanical Engineering, Physics; Chemistry and Biological Sciences.**

An eminent scholar with published work of high quality actively engaged in research. About ten years' experience of teaching and/or research. Experience of guiding research at doctoral level.

OR

An outstanding scholar with established reputation who has made significant contribution to knowledge.

(1) For Professor in Mathematics : Specialization in Computer Science (Software).

(2) For Professor in Physics : Specialization in Physics of Materials/Solid State/Spectroscopy/Opto-electronics.

(3) For Professor in Chemistry : Specialization in Chemistry of Materials/Solid State/Photochemistry/Polymer/Spectroscopy/Theoretical and Physical/Quantum Mechanics.

(4) For Professor in Biological Sciences : Specialization in Molecular Biology/Ecology/Genetics/Evolution/Bioenergetics.

2. **Six Readers (Grade: Rs. 1200-1900): Two in Biological Sciences and One each in Civil Engineering; Electrical Engineering; Physics; Chemistry.**

Good academic record with a doctoral degree or equivalent published work. Evidence of being actively engaged in (i) research or (ii) innovation in teaching methods or (iii) production of teaching materials.

About five years' experience of teaching and/or research provided that at least three of these years were as Lecturer or in an equivalent positon.

This condition may be relaxed in the case of candidates with outstanding record of Teaching/Research.

(1) For Reader in Biological Sciences: Specialization in Plant Physiology/Animal Physiology.

(2) For Reader in Physics : Specialization in Physics of Materials/Solid State/Spectroscopy/Opto-electronics

(3) For Reader in Chemistry : Specialization in Chemistry of Materials/Solid State/Photochemistry/Polymer/Spectroscopy/Theoretical and Physical/Quantum Mechanics.

3. (i) **Thirteen Lecturers (Grade : Rs. 700-1600) : Three each in Biological Sciences; Mathematics; Two each in Physics; Chemistry; Psychology and One in Geography.**

(ii) **One Lecturer in Chemistry (Grade : Rs. 700-1300).**

(a) A Doctorate's degree or research work of an equally high standard; and

(b) Good academic record with at least second class (C in the seven point scale) Master's degree in a relevant subject from an Indian University or an equivalent degree from a foreign university.

Having regard to the need for developing interdisciplinary programmes, the degrees in (a) and (b) above may be in relevant subjects.

Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may relax any of qualifications prescribed in (b) above.

Provided further that if a candidate possessing a Doctor's degree or equivalent research work is not available or is not considered suitable, a person possessing a good academic record, (weightage being given to M.Phil or equivalent degree or research work of quality) may be appointed provided he has done research work for at least two years or has practical experience in a research laboratory/organization on the condition that he will have to obtain a Doctor's degree or give evidence of research of high standard within eight years of his appointment failing which he will not be able to earn future increment until he fulfils these requirements.

(1) For Lecturers in Biological Sciences : Specialization in Cell Biology/Biochemistry/ Ecology/Microbiology.

(2) For One Lecturer in Mathematics: Specialization in Computer Science (Software).

(3) For Lecturers in Physics : Specialization in Physics of Materials/Solid State/Spectroscopy/Opto-electronics

(4) For Lecturers in Chemistry : Specialization in Chemistry of Materials/Solid State/Photochemistry/Polymer/Spectroscopy/ Theoretical and Physical/Quantum Mechanics.

4. **One Reader in Special Education (Grade : Rs. 1200-1900)**

(a) A good academic record with a Doctoral degree or equivalent published work. Specialization in one of the three areas of education of the visually handicapped or of the orthopaedically handicapped or of children with learning disabilities. Evidence of being actively engaged in (i) research or (ii) innovation in teaching methods or (iii) production of teaching materials in the area of the education of the visually handicapped, orthopaedically handicapped or of children with learning disability.

(b) About 5 years' experience of teaching and/or research work provided that at least three of these years were as Lecturer or in an equivalent position in any one of the above areas.

(c) Preference will be given to candidates with a post-graduate degree in Psychology.

5. **Two Lecturers in Special Education (Grade : Rs. 700-1600).**

(a) A doctorate in Education or in relevant subject or research work of an equally high standard.

(b) Good academic record with at least second class (C in the seven point scale) Master's degree in a relevant subject from an Indian University or an equivalent degree from a foreign university.

(c) Specialization in one of the areas of the education of the visually handicapped or of orthopaedically handicapped or of children with learning disabilities.

(d) Preference will be given to candidates with a post-graduate degree in Psychology.

6. **One Workshop Superintendent (Grade : Rs. 1100-1600)**

M.E. in Mechanical Engineering or its equivalent with two years experience in reputed industry or workshop: preferably a teaching workshop.

OR

At least a IInd Class Bachelor's Degree in Mechanical Engineering or its equivalent with five years experience in reputed industry or workshop preferably a teaching workshop.

7. **One Lecturer in Civil Engineering (Grade : Rs. 700-1300).**

(1) First Class Bachelor's Degree in Civil Engineering or Technology or equivalent.

(2) 5 years of industrial experience in production design or maintenance and/or teaching experience.

8. **Three Foreman Instructors (Grade : Rs. 700-1300).**

Bachelor's Degree in Mechanical/Electrical/Civil Engineering or its equivalent with two year's teaching/professional experience.

OR

A Diploma in Mechanical/Electrical/Civil or its equivalent with seven years experience of which at least three years should be in a proper industry.

9. **Two Assistant Directors (Grade : Rs. 700-1600), Centre of Adult & Continuing Education & Extension.**

(a) Postgraduate Degree atleast in the Second Class in one of the Social Sciences/Social Work/Adult Education or an equivalent qualification of a foreign university. A person with a doctorate in any of these areas will be preferred.

(b) Experience of research, teaching and/or field work of atleast two years experience of field work or extension work will be necessarily essential. The requirement of experience should not be more than two years.

(If Reader holding a substantive post is selected from the University concerned, he/she will be permitted to carry the scale and salary and other benefits).

10. **Two Professional Assistants (Grade: Rs. 550-900).**

M.A./M.Sc./M.Com. and B. Library Science.

11. **One P.G.T. in Economics (Grade : Rs. 550-900), Temporary but likely to be made permanent.**

Essential

(i) Master's degree of a recognised University in the subject concerned.

(ii) University Degree or Diploma in teaching.

OR

3 years teaching experience in a college.

7 years teaching experience in a High or Hr. Secondary School.

12. **One T.G.T. in Science (Grade : Rs. 440-750), Jamia Middle School).**

Essential

(i) B.Sc.(Hons.) in Maths. or B.Sc. (Pass) in Physics, Chemistry and Maths in IInd Division.

(ii) B.Ed. in IInd Division.

(iii) Certificate in Special Education (Teaching of handicapped children preferably, the mentally retarded and the orthopaedically handicapped.

(iv) Knowledge of Urdu.

Desirable

(i) Command over English Language.

(ii) Keen interest in co-curricular activities and proficiency in such activities which may be useful for the handicapped children.

13. **Seven T.G.T.s (Grade : Rs. 440-750), Jamia Hr. Sec. School.**

Educational Qualifications

1. (a) Science Teacher (T.G.T.) : B.Sc. in Physics and Chemistry.

(b) Science Teacher (T.G.T.): B.Sc. in Botany and Zoology.

(c) Mathematics Teacher (T.G.T.) : B.A. or B.Sc. in Mathematics.

(d) Language Teacher (T.G.T.) : B.A. with Hindi.

(e) Language Teacher (T.G.T.) : B.A. with Urdu.

(f) Language Teacher (T.G.T.) : B.A. with English Literature.

(g) Social Science Teacher (T.G.T.): B.A. with any one of the following subjects : History or Geography or Political Science.

2. B.Ed. (Special Education) or B.Ed. with a certificate in Special Education (Teaching the handicapped children preferably the mentally retarded and the orthopaedically handicapped).

3. Knowledge of Urdu.

14. **One School Social Worker (Grade : Rs. 440-750).**

(i) M.A. in Social Work.

(ii) Experience of working with handicapped children.

15. **Three Teachers (Grade : Rs. 330-560), Jamia Middle School.**

(1) Higher Secondary/S.S.C./Intermediate.

(2) 2 years training course in Teaching.

16. **One Stenographer (Grade : Rs. 425-800).**

Higher Secondary with a minimum speed of 40 w.p.m. in English typing and 120 w.p.m. in Shorthand in English.

Desirable

(1) Graduate with previous experience of noting and drafting in English.

(2) Knowledge of Urdu.

17. **One Urdu Typist (Grade : Rs. 330-560), Leave Vacancy and Four Clerk/Typists in English (Grade : Rs. 260- 400), Permanent.**

1. Matriculate.
2. Qualifying in the prescribed test in English/Urdu/Hindi respectively and typing with a minimum speed of 35 w.p.m.
3. Knowledge of Urdu.

Desirable

1. Previous Office experience relating to the Accounts.
2. Knowledge of Hindi.

Note

(1) 12.5% non-teaching posts shall be filled from amongst members of the Scheduled Castes and 5% from amongst the members of the Scheduled Tribes.

(2) The number of vacancies given in the advertisement above are liable to be changed without notice by the Jamia.

Shoaibur Rehman
REGISTRAR

GRAMAUDYOGIK SHIKSHAN MANDAL

AURANGABAD (M.S.)

WANTED PRINCIPAL

This mandal is operating the College of Applied Science at Aurangabad, where in a degree course of three years duration leading to the degree of B.Sc. (Applied) in the Civil, Mechanical, Electrical, Electronics, Instrumentation disciplines is offered.

Mandal is seeking a suitable candidate to be appointed as Principal having Doctorate degree/Post Graduate degree in one of the above disciplines with at least seven years Educational/Industrial/Research experience. Service conditions and Pay scales as per Marathwada University rules.

Applications are invited on plain paper for the Principal's post on or before 3-3-1985 with complete bio-data and true copies of documents supporting educational qualification, experience etc. addressed to the General Secretary G.S. Mandal Post Box No. 327, Aurangabad. (M.S.)

Candidates should appear for interview at 11.30 a.m. on 10-3-85 alongwith all original documents at their own cost.

Dr. C.B. Kawade
GENERAL SECRETARY

Printed & Published by M. S. RAMAMURTHY, on behalf of the Association of Indian Universities,
AIU House, 16 Kotla Marg, New Delhi 110002. Grams : UNIBOARD. Phones : 276504, 276780 & 273037
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University News

G.D-52

MARCH 8, 1985

Re. 1.00

Sixtieth Annual Meeting

Addresses

- Union Education Minister
- President, AIU
- Governor of Meghalaya

CLASSIFIED ADVERTISEMENTS

PUNJABI UNIVERSITY
PATIALA

Advertisement No. 83/PRO/Estt./ Feb. 1985

Applications are invited for the following posts:

1. **Readers :** (One each in Chemistry and Zoology)
(Grade :Rs. 1200-50-1300-60-1900)

Qualifications

Good academic record with a doctoral degree or equivalent published work. Evidence of being actively engaged in (i) research or (ii) innovation in teaching methods or (iii) production of teaching materials.

About five years' experience of teaching and/or research provided that at least three of these years were as Lecturer or in an equivalent position.

This condition may be relaxed in the case of candidates with outstanding record of Teaching/Research.

Specialization

(Reader in Zoology)
Physiology/Cytogenetics

2. **Lecturers :** One each in Zoology, Botany, Public Administration, Hindi
(Grade : Rs. 700-40-1100-50-1600)

Qualifications

(a) A Doctorate's degree or research work of an equally high standard; and

(b) *Good academic record with atleast second class (C in the seven point scale) Master's degree in a relevant subject from an Indian University or an equivalent degree from a foreign University.

Having regard to the need for developing interdisciplinary programmes, the degrees in (a) and (b) above may be in relevant subjects.

Provided that if the selection committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may relax any of qualifications prescribed in (b) above.

Provided further that if a candidate possessing a Doctor's degree or equivalent research work is not available or is not considered suitable, a person possessing a good academic record, (weightage being given to M.Phil or equivalent degree or research work of quality) may be appointed provided he has done research work for atleast two years or has practical experience in a research laboratory/organisation on the condition that he will have to obtain a Doctor's degree or give evidence of research of high standard within eight years of his appointment, failing which he will not be able to earn future increment until he fulfils these requirements.

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1. **Lecturer in Zoology**
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Note

1. The Selection Committee for the posts of Reader and Lecturer in Zoology can recruit a person with specialization either in cytogenetics or Physiology as it may deem fit.

2. The candidates who have already applied for the post of Lecturer in Public Administration (leave vacancy) in response to an earlier advertisement need not apply again.

Note

*For the post of Readers & Lecturers, Good academic record will be determined as under:

(i) A candidate holding a Ph.D. degree should possess atleast a second class Master's degree; or

(ii) A candidate without Ph.D. degree should possess a high second class Master's degree and second class in the Bachelor's degree; or

(iii) A candidate not possessing Ph.D. degree but possessing second class Master's degree should have obtained first class in the Bachelor's degree.

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UNIVERSITY NEWS

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Editor :
M. S. RAMAMURTHY

Union Education Minister Shri K.C. Pant Addresses AIU Annual Meeting at Shillong

The Sixtieth Annual Meeting of the Association of Indian Universities was held at Shillong from 26th to 28th February, 1985. Shri K.C. Pant, Union Education Minister, delivered the Inaugural Address. His address is given below.

"It is indeed a great pleasure for me to have had this opportunity to participate in this Annual Meeting of the Association of Indian Universities. I consider this meeting particularly significant and important from the point of view of the efforts that we have initiated to review our education policy. As you all know, one of the major tasks that the new Government has addressed itself to is the reconstruction and reorientation of our education system to make it more relevant to the needs of national integration and development. As leaders of the academic world, you have rich experience of the problems and prospects of our education system, and your insights can contribute substantially to the shaping of the new initiatives that we need to take. To this end, I shall look forward to clear-cut concrete and implementable ideas emerging from your deliberations on education in general and higher education in particular.

The general objectives of education in terms of the ultimate goals and human fulfilment have been spelt out by the best minds over the ages. However, there is a need to reiterate them. Contents and methodologies of education, too, deserve focal attention, and I shall respectfully receive from you suggestions and recommendations in this regard. I should, however, like to dwell upon the social dimensions of education in the present-day Indian context. **In the general framework in which our entire educational system is set, there is, first, the alarming problem of the growth of population which increases, at an accelerated rate, pressures on our economic and social institutions**. Moreover, recognising the need to develop human resources as an essential pre-requisite of national reconstruction, we are committed to universalise elementary education as early as possible. One inescapable. consequence will be a much greater pressure of numbers at various levels of education, including higher education. Already, we have two major complaints, namely, the increase in the number of unviable colleges and the rising tide of unemployment among educated youth. There is also a wide-spread feeling that standards of education in our universities are on the decline. It is time we faced these issues squarely and boldly, and took steps to initiate corrective action. There is bound to be a time-lag between the initiation of the process of change and the desired results, but what is important is to begin the process of change without delay.

It is increasingly recognised that education as a sub-system is not properly and adequately linked with various sectors with which it has direct relationships. Education and production, education and employment and education and culture—these are the three important links through which education derives its justification as an instrument of development and human progress. The productive sector largely determines the kind and quality of manpower that is needed and which it expects from the educational sector. The employment market as a whole determines the magnitude of the number that can be absorbed and which ought to be produced by the educational institutions. And, finally, cultural organisations reflect the level of refinement which, in turn, is determined by all-round excellence of education. In an ideal system, which we should endeavour to build up, these linkages should ensure a dynamic balance between demand and supply, and should reinforce each other. Unfortunately, the central instrument for the linkage of education with other sectors is the examination system, which is itself imperfect. As a result, there is disharmony between education and the rest of the system, and this generates inefficiencies and wastages which deprive the wheels of progress of the full propelling force of which the educational system is otherwise capable. The inadequacy of our educational system can be seen clearly in the faulty relationship that has developed between degrees and employment. Barring the linkage between professional education and its corresponding employment market, there does not seem to be any satisfying nexus between degrees and jobs. What one learns in the college or the university is more often than not unrelated to what one does on entering the world of work.

Education and production, education and employment and education and culture—these are three important links through which education derives its justification as an instrument of development and human progress.

A study of the enrolment data suggests that nearly 80% of the students enrolled in our universities and colleges are pursuing general education programmes largely because acquisition of a degree is a *sine qua non* both for securing a job and for future promotions in the job. Our general educational programmes are not occupation-specific. They are at best designed to equip a person with broad-based generic knowledge and skills. In this connection, three questions need to be considered. First, there is a need to assess various kinds of jobs that are actually or potentially available, and which are relevant to general education programmes, and to review the contents of these programmes. Secondly, there is a need to evolve/modify educational and training programmes which are relevant to job requirements but which at present are not succeeding in matching the skills imparted to the skills required. Similarly, there is need to evolve new programmes to cater to unsatisfied or emerging needs. And, thirdly, there is a need to consider the orientation and methodology of examinations and system of certification which alone can forge the required linkages on sound lines.

It is in the context of these needs that the question of delinking of degrees with jobs should receive the utmost attention of educationists and educational administrators. One important consideration that will come up will be the linkage of secondary education. As you know, at the senior secondary level, our policy is to vocationalise education, so that students may have the possibility of a choice to enter into the vocational stream. But the linkage of the vocational stream with professional education or general education at higher levels is still a grey area, requiring clarification, further precision and possible modification. And yet, this is not enough. What we further require to consider is whether we should not conceive of more meaningful programmes at 10 plus and 12 plus levels, so that those who need specific training required for identified avenues of employment could receive the requisite training.

We are proposing to set up a National Open University in the coming months. This University will make full use of available know-how and new advances in education technology, particularly in view of our increasing capacities in the computer, TV and video technology. This is another important subject on which I shall be happy to have your considered and expert suggestions and recommendations.

In this emerging picture of new education, there will a judicious control of the magnitude of the number of students entering into colleges and universities. What is important to ensure is that those who enter the stream of higher education are really the ones who have the aptitude and competence to pursue the rigours and discipline of higher levels of thinking, comprehension and expertise. But we must recognise that as the general level of education continues to rise in our country, the pressure of numbers knocking on the doors of higher educa-

Job-orientation has a tendency to under-play the requirements inherent in the healthy development of personality as also of pursuit of ideals of national integration and values of our composite culture. We have, therefore, to conceive of system in which due weightage is given to these important aspects.

tion will progressively grow. This underlines the urgency of developing institutions of non-formal education, of distance education and of open universities. Non-formal education, is to my mind, a very important area, and its potentialities need to be explored more and more fully. We are proposing to set up a National Open University in the coming months. This University will make full use of available know-how and new advances in education technology, particularly in view of our increasing capacities in the computer, TV and video technology. This is another important subject on which I shall be happy to have your considered and expert suggestions and recommendations.

As we know, the job requirements in agriculture, industry, trade and commerce in our country have undergone tremendous changes during the last 20 years or so with the adoption of rapidly improving technologies. We need to assess these changes and see how far our educational programmes have kept pace with them. The changes that have occurred in communicatiton technology have profound repercussions on informatics ,which in turn, demand new skills and new job requirements. This area alone will impose upon our secondary and higher education the necessity of devising new programmes of studies and vocational education.

There is another aspect which also will need to be taken into account. Job-orientation has a tendency to underplay the requirements inherent in the healthy development of personality as also of pursuit of ideals of national integration and values of our composite culture. We have, therefore, to conceive of a system in which due weightage is given to these important aspects.

As the new programmes would develop, one can conceive of a greater and healthier linkage between education and sectors of production. Productivity is the hall mark of development and prosperity of the nation, and education must prepare the right kind of manpower that can sustain a progressive rate of productivity.

The linkage should, however, be two-way traffic: productive sectors providing themselves educational and training facilities to students, and personnel of productive sectors participating actively in schools, colleges and universities as partners in teaching and in designing and planning programmes of education.

Let us turn now to the examination system. When we speak of delinking degrees with jobs, we do not necessarily imply delinking of examinations from jobs. What is meant is that degrees of general education are not organically related to jobs. For determining suitability for jobs, there has to be some examination system, although the orientation, nature and content of that system should be quite different from the present system. The new system will have to be patently objective and reliable. It has been suggested that these examinations should be conducted by a National Testing System, which can be charged with evolving and maintaining a credible, nationally uniform standard. In the absence of a National Testing System, a student today is required to appear at a series of examinations, be it for admissions to universities for further education, or for entering the employment market. The National Testing System, on the other hand, will open a variety of avenues for him by passing just one National Test.

23 APR 1985
C.F.T.R.I., MYSORE

Productivity is the hall-mark of development and prosperity of the nation, and education must prepare the right kind of manpower that can sustain a progressive rate of productivity.

As we ponder over these issues, a picture of a new system of education seems to emerge. **One aspect of education, which can be called a core aspect, should be concerned with what Swami Vivekananda called Man-making education. This would include the development of the power of concentration, will-force, and values of physical, intellectual, ethical, aesthetic and spiritual culture. A second aspect would be concerned with general competence required of the present-day youth. This would mainly cover linguistic competence and acquaintance with tools and machines of every-day life. And the third component would be related to the world of work. Finally, education should be so designed that it provides to every individual at every terminal point possibilities of continuing education.**

Management of the university system is still another crucial area. It is often argued that the present management models are a legacy of our colonial past. In the new situation that we are envisaging, we must ensure an efficient management of higher education. The autonomy of universities is important, but it goes hand in hand with acco-

In the absence of a National Testing System, a student today is required to appear at a series of examinations, be it for admissions to universities for further education, or for entering the employment market. The National Testing System, on the other hand, will open a variety of avenues for him by passing just one National Test.

untability. The development of such management models is, in fact, inescapable, if we have to ensure adequate returns to the society from the investments that we are called upon to make in our educational system.

The linkage of education with cultural organisations is of fundamental importance. And, by culture we do not mean merely art, music, dance and drama, but all the domains of life which come to be governed by higher levels of thought and creativity. In the context of the contemporary advancement of science and technology, we must create a scientific culture; we must produce men and women with a scientific temper capable of questioning and seeking, of discovering and inventing, and of constant expansion of knowledge by methods of verification and experience. At the same time, we should ensure that under the pressure of technology man is not reduced to the level of a machine. Therefore, we must advance the culture of philosophical thought and literary creation and self-discipline born at ethical and spiritual values. And here, the role of higher education is most decisive. For it is in the domain of higher education that we expect the highest guidance for the quest of excellence and truth.

The autonomy of universities is important, but it goes hand in hand with accountability. The development of such management models is, in fact, inescapable, if we have to ensure adequate returns to the society from the investments that we are called upon to make in our educational system.

We speak today of the need to synthesise science and spirituality. This is perhaps the supreme cultural need of the times. But this need can be fulfilled only if universities foster among students and teachers a new orientation and a new impulse which aims at channelising constructively the awesome power flowing from science by tempering it with the wisdom of the spirit. If this endeavour is undertaken by universities, it will forge a harmonious linkage between research laboratories, institutions of higher learning and institutions of arts and crafts.

University education is a vast subject, and it is impossible to cover different aspects within a short time. I have, therefore, deliberately limited myself, as I said earlier, to the social dimensions of education, and particularly to the linkages through which education can contribute to the general development of society. It is always stimulating to meet people of learning, and of excellence; it is even more stimulating when one meets Vice-Chancellors, who are leaders of thought and expertise, and who combine in themselves the qualities of the academic and the administrator. I am very grateful to the Association of Indian Universities for inviting me and for giving me an opportunity to meet all of you. As I said earlier, I shall look forward to the suggestions which will emerge from your deliberations.

In the context of the contemporary advancement of science and technology, we must create a scientific culture; we must produce men and women with a scientific temper capable of questioning and seeking, of discovering and inventing, and of constant expansion of knowledge by methods of verification and experience. At the same time, we should ensure that under the pressure of technology man is not reduced to the level of a machine.

With these words, I have pleasure in inaugurating this Annual Meeting of your Association. □

UNIVERSITY NEWS

University News is published weekly by the Association of Indian Universities to promote awareness of contemporary thinking on higher education. Views expressed in the journal are those of the authors and do not reflect the policies of the Association.

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Obstacles to Creativity in Higher Education

Presidential Address delivered by Prof. M. S. Gore, President AIU and Vice-Chancellor, University of Bombay at the 60th Annual Meeting of the Association of Indian Universities held on February 26-28, 1985 at the North Eastern Hill University, Shillong.

"My talk to-day is divided into two parts. In the first part I attempt a critique of our present system of higher education from one vantage point viz. the need to make education a creative experience for teacher and student alike. In the second part, I indicate briefly the link between the issues that I have discussed and the two main themes of our conference this year.

I

The overarching purpose of education is to spark the element of creativity in an individual, to remove the obstacles to it, to protect it and to strengthen it. All other goals like the communication and creation of knowledge, the development of an individual's personality, the promotion of professional or occupational skills, the laying down of a framework of values and a social commitment are but facets of this larger goal of making the individual—teacher and student—creative. This creativity may find expression in the form of scholarship resulting in contribution to knowledge, in development of skills and personality characteristics necessary for a good professional, in the inculcation of personal discipline, social commitment and a skill in relationships with people which equip the individual to provide leadership in an organization or in the wider community, or in the development of a special talent in the field of fine arts or sports. Creativity lies in the ability to perceive new relationships, new challenges, in the ability to cope with changing situations, and in the ability to express these perceptions and responses whether through the symbolism of art, through meaningful and appropriate social action or through widening the base of knowledge so that answers to individual and societal problems can become available.

For some reason the link between the printed word and one's own experience is not established—so that there is neither a sense of discovery and affirmation or questioning of what has been said in the book.

It is my submission that for a vast majority of the students and teachers involved in it our education system does not provide a creative experience. Even those who obtain first divisions and attain distinctions do not always succeed in developing an ability to think on their own. They often become coneyors of knowledge and not its creators. Admittedly, there is an over generalization in my statement and I am aware of the many individuals who earn prizes and awards in recognition of their original work in different fields of knowledge. But such individuals are relatively few. **Our concern as educators should be how to make the experience of education—higher education in particular—creative in the sense that it enables a larger proportion of them to maximise their potential abilities and find excitement in the use of these abilities to cope with the challenge of their social and physical environment.**

One of the requirements for education to be creative is that it should be concerned with ideas and experiences rather than with books and the printed word. Except in a few fields like pure mathematics and symbolic logic, ideas are related to the world around us—physical and social. Education should be concerned with ideas which seek to understand, interpret, nurture, protect or change this environment around us. When education is preoccupied with text-books, it is preoccupied with words rather than ideas, and while words represent ideas they also often tend to be used, memorised and repeated without an understanding of their content.

Education preoccupied with words—whether memorized as in the old pathshalas or printed in books as of now—tends to be limiting rather than liberating; it emphasizes memory and a mastery of text more than understanding, analysis and synthesis of ideas and concepts. It is true that without the written and printed word knowledge could not have grown to the extent that it has nor diversified in the manner that it has. It is also true that without the written word we would not be able to cope with the rapidity in the growth of knowledge nor ensure its systematic cumulation. Yet a mastery of words and formulae without an understanding of their content and significance cannot be a creative experience.

Much of our education at the school and college level has tended to emphasize the printed word and has failed to provide for the interaction between the student and different aspects of his envitonment which would make those words meaningful. Children learn poetry and memorise the words without the imagery communicating itself to them. A boy studying even in a rural school will learn about the major crops of the State from his geography book, but will not relate the names of the crops to what he sees around him. For some reason the link between the printed word and one's own experience is not established—so that there is neither a sense of discovery and affirmation or questioning of what has been said in the book. Our education has tended to emphasize examination rather than learning or teaching. It channels the entire educational process in the direction of a final judgement on the achievement of the student rather than on his growth from the point where he began or relate it to his own life and experience. In other words it emphasizes the end result of 'certification' rather than the process of education.

Another source of the lack of creativity in our system of education is the high degree of centralization that characterizes academic decision-making and academic supervision in our universities. Most of the large universities have about a hundred or more colleges affiliated to them. The curricula and the syllabli for the courses taught in all the different colleges are centrally set. This is expected to help maintain standards by defining the content of what will be taught to students studying a particular course. The majority of the teachers in the affiliated colleges do not participate in this phase of syllabus formation. In order to ensure that the teachers teach the same courses and teach them adequately the university goes on to define the specific text-books to be used by the teachers. The paraphernalia of local inquiry committees, the requirement that the teachers in the colleges be 'approved' by the university are further efforts to standardise the quality of instruction in the colleges. The individual college teacher is a non-participant in this process. He is given his students, his text-books and the subject-areas he is expected to teach. His role is to interpret and explain the text-book and prepare the student for the university examination. His reputation as a teacher, in good part, depends upon how his students perform in the examination.

The examination . . . mechanism is expected to ensure objectivity as well as inter-institutional comparability. In the bargain it depersonalises the role of the individual teacher.

The examination is conducted by the university. Its objectivity is sought to be ensured by a whole mechanism of confidentiality and secrecy whereby the student is expected not to know who his paper-setter and examiner is and the examiner does not know whom he is examining. This mechanism is expected to ensure objectivity as well as inter-institutional comparability. In the bargain it depersonalises the role of the individual teacher.

Neither the student nor the teacher can experience creativity in this process which in the name of maintaining standards and ensuring equivalence only succeeds in emphasizing—for the average student—rote learning and a variety of short-cuts to achievement of high marks in examinations. What is ironic is that the pattern of external examinations involving thousands of students and hundreds of paper-setters and evaluators does not ensure inter-institutional comparability in the process of instruction. At best, what it achieves is a certain impersonality in the process of evaluation. It cannot always achieve even comparability of evaluation between the different examiners who assess the answerbooks.

A third obstacle to creativity is the inevitable tendency of most curricula to focus down to a narrow range of intellectual skills and areas of knowledge. This is partly a consequence of the large number of students in all affiliated institutions and their inadequate infrastructures in terms of staff, space and library facilities but it is also largely a result of the view that education is concerned with the communication and absorption of knowledge which is tested in a terminal, written examination. The other aspects of the student's personality—viz. the development of his emotions, sentiments and attitudes, the development of social commitment and self-discipline—figure as objectives only in convocation addresses. Yet, the most informed person without maturity of outlook, without discipline or without any social commitment can achieve but little either for himself or for the society of which he is a member.

Our education system—both at the school and the college levels—leaves this entire area out of the curriculum and expects that somehow the co-curricular and extra-curricular activities will meet these other needs of students. These latter activities are not well planned, only a handful of teachers take any interest in them and achievements of students in these activities do not form a part of their final assessment.

The emphasis upon knowledge is not wrong, but only about 15-20 per cent of the total undergraduate student body—those who achieve high second class or first class marks—are really involved in mastering knowledge even at the level of information and a certain measure of analytical skills. The rest of the students just study to pass the examination. In most, large universities only about 40 per cent of the students who join in the first year complete their degree in the minimum prescribed period of three years—though all of them are full-time students.

The exclusive emphasis, at the undergraduate level on knowledge communication and knowledge inculcation is a sterile excercise in this context. It tends to neglect the interests of the majority of the student body that does not respond to this narrow academic orientation. The average Indian undergraduate is also young—younger by about an year in age—as compared with undergraduate students in developed countries who have often come to college after doing a stint of work during or after their high school days. There is a need to broaden the spectrum of recognized, 'academic' activity to include some of the 'extra-curricular' and 'co-curricular' activities like sports, N.C.C., N.S.S., physical fitness etc. so that college education will meet the differing needs of different students and will provide every student with an opportunity to grow not only in knowledge, but in emotional and social maturity.

Apart from text-book orientation and a pattern of external examinations which test memory rather than intellectual capacity for analysis and perceptions of relationships between variables, the third obstacle to creativity in our system of higher education is the tendency to centralization in all academic decision-making in our universities. Its worst effects are seen in the large, affiliating universities where bodies like the academic council and boards of studies make decisions about curricula, syllabii, equivalence etc. whereas the actual teaching is done in the hundred or more affiliated colleges which are often far removed from the head-quarters of the university—separated both by physical distance and academic hierarchy. The university lays down qualifications of teachers, qualifications for admissions of students to different courses and seeks to enforce its various statutes, ordinances and regulations through periodic inspections of the colleges. The increasing number of colleges—usually more than a hundred per affiliating university—and their distribution over six to eight districts of a state make this process cumbrous and time-consuming. The academic decision-making process becomes formal, rigid and less responsive to variations in the local situations. Even the text-books prescribed cannot be changed very easily and the supervision to be exercised by the university over the colleges becomes mechanistic. The rationale behind the centralized decision-making is that it helps to maintain standards of instruction and ensures comparability between different institutions. This is further sought to be guaranteed by the system of external examination and all its trappings of impersonality and confidentiality.

Efforts at "standardizing" education are helpful only upto a point, but largely they tend to stifle initiative, flexibility and innovation on the part of individual institutional managements.

The net result is that education in our universities has become narrowed down in focus, rigid and inflexible in decision-making and more related to text-books than to the life context in which it functions. The monolithic affiliating university is an obstacle to making education creative. The Kothari Commission spoke of autonomous colleges. Twenty years later we probably do not have more than twenty colleges which have gained or been granted autonomy. Academic administrators are worried that standards of education will fall if colleges are allowed to function autonomously. What is not realized is that in the present process the standards of entire universities tend to fall to the lowest common denominator. Besides, the most zealous efforts at standardization and supervision cannot ensure that the educational process in all colleges of a University will be comparable. In every university though all colleges prepare students for the same degree, the prospective students make a difference between one college and another. Some colleges attract students from the highest decile and some from the lowest decile in terms of marks obtained at the qualifying examination—though the fees charged are the same and the colleges are located in the same town. Efforts at "standardizing" education are helpful only upto a point, but largely they tend to stifle initiative, flexibility and innovation on the part of individual institutional managements.

I began this talk by referring to what I consider to be the supreme objective of education—which is to arouse and promote creativity in the student. This creativity may lie in the world of scholarship and may express itself through traditionally known channels of academic activity. But different students may have talents in different directions; our education system must be sensitive enough to help them identify their particular abilities and flexible enough to provide them with opportunities for growth. While education must emphasize the development of excellence—this excellence need not be of a particular stereotype. Our educational system will have to be much more flexible in its operation and provide for learning related to many more areas of knowledge and life's activities. The centralized administrative structure, the standardized curricula and the pattern of external examinations are not conducive to flexibility or diversification and become major obstacles to making the educational experience creative for the student and teacher alike.

II

It should be obvious from what I have said above that I am not in favour of large, monolithic affiliating universities in which a whole cohort of 20 or 30 thousand students who pass the H.S.C. examination and join the first year of college in a particular faculty, during a particular year, are treated as one unit who must go through the same set and sequence of courses and qualify for the same externally organized university examinations in successive years until they qualify for a particular degree.

I am in favour of smaller units where even within a single college each teacher teaching a course and his group of students form the basic unit of the system. The teacher should develop his own course and examine his students for that course. Each student should be free to choose a different combination of courses from within an available range, accumulate a required number of passes and qualify for the degree at his own pace. There need be no overall written examination either held annually or at the end of two or three years to see whether all the students have attained the required minimum knowledge in the group of subjects or courses which are chosen by them. In fact, a whole large group of students need not be put in a directly competitive situation where they are judged and classified into acceptable, good and superior students.

The individual college in such a system would be large enough to provide for the same undergraduate course being taught by different teachers and flexible enough to allow individual teachers to develop somewhat varied but roughly comparable courses at different levels of advancement or sophistication in a discipline. The student would have a choice of teachers as well as courses: the teacher would also be free to admit or not to admit particular student for his course depending on his previous academic preparation in a given discipline. This scope for mutual selection of teacher and student is a necessary part of a system where the teacher would have the freedom to develop his own course and evaluate his own students.

One may ask how will comparability be achieved in such a system where students have passed different courses and are graded by different teachers: or how is comparability achieved between graduates in a particular academic discipline who have been educated in different colleges. The answer is that in a strict sense there is no single certifying agency which ranks the attainments of graduates from all different institutions. There can be some coordinating, accrediting associations of colleges and universities. There is also the somewhat undefined criterion of the "professional" standing of individual teachers and institutions in particular fields. But there is no general, super-imposed certifying agency.

The post-graduate institutions of study can have their own tests or criteria of achievement in judging a student's eligibility where they are doubtful: they can also allow the student a trial period during which to decide the additional courses that he might need to study to benefit by the courses offered by the institution.

Employers — large employers — may apply their own selection procedures in choosing their new employees. This happens even to-day in India. Entrance to administrative services under government or to managerial positions in banks and financial institutions is based on special examinations given by the employing authority.

There can also be testing services which examine and testify to the level of attainment of a candidate for purposes of higher study, for employment scrutiny, or for other general purposes. But such testing agencies would not confer any degrees or diplomas and graduates of individual colleges need not undergo these tests unless they wished to do so and then only for specific purposes.

In India, the University Grants Commission has already introduced its own tests for the selection of research scholars who would be eligible to receive U.G.C. funded research fellowships. In our own conference this year, we are going to devote one session to this subject of developing National Testing Services in the country.

That we feel the need for developing such a service is an acceptance of the fact that the mechanism of standardizing the process of student evaluation through "outside" examiners is no longer fulfilling the purpose. In fact, it is proving counterproductive by making the entire process of instruction formalistic and uncreative for the student as well as teacher. If we accept this reality with an open mind we will be ready to experiment with an educational system which is less restrictive, less oriented to standardizing and narrowing the range of courses of study pursued by thousands of students in hundreds of affiliated institutions. We will have to start by believing in the capacity and willingness of the teacher to be his own monitor of the quality and content of what he teaches. This is a necessary context for the teacher to be innovative and creative.

I am in favour of smaller units where even within a single college each teacher teaching a course and his group of students form the basic unit of the system.

A question may be asked why we have not been able to achieve anything spectacular by way of innovation in those universities some of them are central universities — which are non-affiliating and which directly undertake to teach their own undergraduate as well graduate students. First, I would not like to say that the unitary universities have not been able to achieve anything. But what is more important is that even in our unitary universities the structure of organization, the processes of course development and evaluation follows very nearly the same pattern as in the affiliating universities. It is only in the I.I.T.'s, the I.I.M.'s and a few of the newer Agricultural Universities that efforts have been made to develop new courses and new patterns of educational curriculum organization. The differential results achieved by these two types of unitary institutions are worth studying in depth and it is possible that our discussion in the session devoted to the UGC report on Central Universities will underline some of these issues.

In conclusion, let me say unambiguously that I do not consider the alternative system of organization of college education to be an answer to all our problems or to be perfect in any sense. No system is perfect from every point of view at any given time and it is not even necessarily adequate to meet particular problems at all times. It is of the essence of creativity orientation that one is sensitive to new issues and problems as they arise and devised means to meet the problems as one goes along." □

Meghalaya Governor Addresses AIU Annual Meeting

Given below is the Address of Shri Bhishma Narain Singh, Governor of Meghalaya, delivered at the 60th Annual Meeting of the Association of Indian Universities held on February 26-28, 1985 at the North-Eastern Hill University, Shillong.

"I am thankful to the Association of Indian Universities for inviting me to preside over this inaugural session of the 60th meeting of the Association. I am happy that the Association are holding this first ever annual meeting of theirs at Shillong in the North Eastern Region. Our universities here are comparatively young, the first university having been established after Independence in 1948 at Gauhati; We have now five universities in all—Gauhati, Dibrugarh, Jorhat, Imphal and NEHU—the first Central University in the North East—with campuses at Shillong, Kohima, Aizawl and Medziphema. Tripura has a Post-Graduate centre of Calcutta University while a university in Arunachal will be established shortly. Our people are keen on education having attained levels of literacy higher than average in the country while some of our units are new in the top brackets. Nevertheless our universities will need considerable support from the academic community in the country during their formative years, and I am happy about their positive response. I hope this meeting of the Association will create positive conditions for academic exchange between the institutions of this region and rest of the country, and for establishment of centres of excellence in this region.

At the time our country attained Independence, access to education was very limited. I recall my own case when I had to go out of my district to get school, and later, college education, as there was no High School in my locality, and no college in the whole district of Palamu, one of the districts of Chhotanagpur inhabited largely by tribals. But, after early fifties, the succeeding decades have witnessed a growing upsurge of new institutions of higher learning in the country. New there is a general feeling that while the number of schools, colleges and universities has grown manifold, the quality of education, perhaps, has not kept in tune with the needs of the community and the Nation. We now have to consolidate the growth in higher education we have already achieved and to re-direct our resources in a carefully planned manner to evolve a more dynamic and realistic policies of education in keeping with the pressing needs of our societies.

I am glad to learn that this Conference will be deliberating on two themes of national importance—one relating to the 'National Testing Service', and another 'University System'. They are particularly significant at the moment when a new Education Policy is on the anvil, and there is a national resolve, under the leadership of our young Prime Minister to bring about necessary fundamental changes in education so that it can serve the emergent needs of our people and be instrumental in enriching their life both materially and culturally. Value changes from time to time, and perspectives alter over the years. The early concept of the pursuit of knowledge for its academic satisfaction now belongs to the realm of history. As they become more and more involved in problems faced by the nation, universities become part and parcel of the daily existence of our people. The resources of the universities and their reservoir of expertise should be tapped to the advantage of the national efforts for planned economic development. The new education has to prepare our young men and women for meaningful participation in the economic life through acquisition of modern skill. Most of them should join the vocational streams rather than crowd the universities just for obtaining a degree. Under the stewardship of our able Union Education Minister, I am sure, we shall achieve this objective.

The universities have to transform themselves into centres of excellence, provide free forum of exchange of ideas and dispassionate deliberations on issues facing the individuals, the community, the nation, and the humanity itself. We have a great tradition of Nalanda and Taxila, of forest academies in our country where people from all over the world gathered in search of knowledge; let our universities emulate these ideals.

I hope the deliberations on National Testing Service will help in evolving certain alternative patterns and dispensing with the University degrees as the only criterion for employment in various fields. Something urgently needs to be done in respect of admission to different technical courses and even the University education itself. Today every institution has an admission test of its own, though sometimes more than one institution may come together for the purpose. But the fact remains that students desirous of pursuing higher studies are bewildered with the multiplicity of examinations essentially designed to test in the same area. It is high time that a uniform test is administered to all those who wish to move up; their score in the appropriate test should entitle them to admission in a suitable institution. So far as delinking of degrees from the jobs is concerned, let us begin with the highest services where already comprehensive examinations are being held by Public Service Commissions and the degree is a dispensable appendage. I feel this will be a big psychological break-through. The process of delinking then could be continued covering an increasingly wider area.

I am confident that this meeting of the Association of Indian Universities will be a landmark in the history of education of our country. I wish the Association of Indian Universities and this Annual Conference all success. I also hope delegates will take time off to enjoy the wide and varied form of natural beauty this town provides and thus return to their institutions refreshed for rigours of the academic life that lie ahead of them." □

South Gujarat University's survey applauded by Gujarat High Court

A society established "for the protection of democratic rights and civil liberties of the citizens and particularly the downtrodden classes" approached the High Court of Gujarat in the matter of working and living conditions of textile labour in Surat. This case, filed by Lok Adhikar Sangh, as pointed out by the Gujarat High Court "illustrates a new phase in the promotion of social action litigation in this country"

The court observed that Surat which was the hub of the textile industry in the State had an unorganised labour force. The labour laws were not enforced. Before however taking decision in the matter the court felt that "a survey of working conditions of the labour in the textile mills in Surat would alone enable the court to give more concrete shape to any relief that could ultimately be granted by it." The court "felt that the Sociology Department of the South Gujarat University may be equipped to make a survey."

The South Gujarat University thus came to be involved. Perhaps, as observed by the High Court, it was the first time that university resources were utilised by a court in this manner.

Accordingly action research to assist "dispossessed, disadvantaged and depressed strata of Indian society" was taken up by the South Gujarat University last year and its report was submitted to the Chief Justice of the High Court of Gujarat.

As observed by the Vice-Chancellor of the South Gujarat University, Prof. Upendra Baxi in his acknowledgement, "the importance of this assignment can hardly be over-emphasized. It has enabled my colleagues and myself to travel further on the path of what Karl Marx described as a portion of "thinking humanity which *suffers*". I also hope that our inter-action with hapless textile labourers in Surat has assisted them similarly (again in words of Marx) to move towards a portion of "*suffering* humanity which *reflects*". Only the cooperative endeavour of thinking humanity which suffers and suffering humanity which thinks will lead us to the attainment of constitutional socialism."

As many as 59 students and 24 teachers of the university worked on the project.

The university had not the necessary financial resources required to undertake the kind of survey and research that was called for in the matter. However, several teachers of the university contributed on their own some financial resources and enabled the survey to be completed. As observed in the report, "the survey conducted by this university is thus a truely unique endeavour. Instead of seeking funding on a large scale a low cost research experiment was made. All the funds were raised internally by the teachers themselves who also worked with students in investigations in slums, undeterred by the jaundice epidemic in many parts of Surat.... a wide cross section of university teachers in various disciplines joined hands to do all the academic and administrative tasks associated with the report".

Furthermore, the enterprise was unique in another sense. The litigation itself arose out of the M.Phil research by two scholars in the Department of Sociology who presented a paper at a seminar on the "State of unorganised labour" of the Asian Workers Development Institute held at Orissa on the "plight of Orissa labourers in Surat Textile Industries".

The High Court of Gujarat, on the basis of the report submitted to it by the South Gujarat University, has observed in its order dated 30th January 1985 "we have a very precise, useful and scientific report before us which reflects tremendous efforts put in by a dedicated team of teachers and students of the South Gujarat University....we place on record our appreciation of the dedicated honorary work done by this large team....We also place on record our appreciation of the cooperation extended to this court by the Vice-Chancellor of the South Gujarat University. **We do hope that this will serve a precedent for collaboration in the future in many matters particularly in social action litigation where similar cooperation from academic bodies would provide courts with data which would otherwise be unavailable to them"**

Based on the report certain orders have been passed by the High Court of Gujarat in the matter of improving the working conditions of the textile workers in Surat.

This is one glorious example of a University's active involvement with the society around it. ☐

Examination Reforms Seminar at Punjabi Varsity

Mr. Surendra Nath, Advisor to the Governor, Punjab, made a strong plea to change the present examination system so as to make it more meaningful and more relevant to the changing social milieu. He was inaugurating a three-day U.G.C. Seminar on Examination Reforms organised by the Punjabi University, Patiala, on February 15.

Commenting upon the timing of the Seminar, Mr. Surendra Nath observed that there was at present a sharp and heightened awareness in the whole country for improving the system of education and examinations. The government at the Centre, especially the Ministry of Education, is keen to adopt new ideas and go in for bold measures and innovations to overhaul the whole system.

Dwelling upon the defects of the present system, he outlined both the inherent and the acquired defects of the system. Among the inherent defects, he pointed out subjectivity, emphasis on cramming, lack of established validity, and the absence of any clear-cut measures for assessing the real knowledge of the students. These have been further vitiated by the defects acquired through the passage of time under various influences of the present social milieu, such as mass copying, belligerant attitude of the examinees, threats to invigilators, and various other difficulties in the conduct of examination. Administrative measures can be adopted to remove most of the acquired defects but the inherent defects are far more serious and deserve serious deliberations.

No doubt these problems have been discussed and deliberated upon by the various universities and other academic institutions, and certain changes like semester system and continuing niternal assessment system have been introduced in certain universities, but the results have not been very encouraging. It was perhaps because of sheer inertia and a clash between new ideas and vested interests.

To achieve the required results, it is imperative in a democratic country like ours that the people be properly educated and made aware of the need for change. The success of a system, Mr. Surendra Nath emphasized, depended upon the human material that was engaged in its operation. The teachers must be imbued with a spirit of dedication and realise that there was no greater charity than the charity of imparting knowledge. Dwelling upon the need to cater for the spiritual dimension of knowledge, the Advisor emphasized that the teachers must feed the flame of idealism in the young men and women so as to keep it burning. Some ways had to be found to strengthen this spirit which underlines such an ideal system of education.

In his Keynote Address, Professor Ali Ashraf, Vice-Chancellor of Jamia Millia Islamia University, said that the present examination system needed urgent, bold and basic reforms but it could not be assessed in isolation from the system of education as a whole.

In the present examination system the conduct of examination has become so vicious that in many cases, the examinations have ceased to be valid and reliable measures of students merit. The malpractices and distortions in the examination system, he said, have acquired a sort of legitimacy which is highly unfortunate. Some of the defects of the present pursuit of academic life, linked as it is with the employment requirements, may be reduced by the delinking of degrees from jobs but we shall still need examination for certain purposes. The efforts of certain universities to improve the examination system through the introduction of tutorials and the semester system have not borne the desirable results mainly because of the lack of dedication on the part of teachers and the lack of proper motivation among students. All reforms in the examination system, he emphasized a culture of professional competence, per-

Mr. Surendra Nath, Advisor (Education) to Governor, Punjab inaugurating the Seminar on Examination Reforms at Punjabi University.

sonal integrity and strength of character among teachers. Professor Ali Ashraf was also critical of the indiscriminate and unlimited admission of students which stood in the way of meaningful reforms in the system of education and examinations.

Dr. S.S. Johl, Vice-Chancellor, Punjabi University, Patiala, observed in his Presidential Address that Punjabi University was seriously considering drastic changes in the examination system. The present system, he said, is zealously and jealously guarded by the elements of secrecy, dishonesty and subjectivity. The teacher does not know whether his students would be examined on the basis of what he has taught and the students do not know whether what they are being taught would be tested in the examinanation or not.

Dr. Johl pleaded for drastic changes in the assessment system. According to him, continuous internal assessment would probably be the best answer to most of the defects of the existing system. However, he expressed surprise at the reluctance of some teachers in introducting an internal assessment system in a Seminar on internal evaluation organised recently by the university.

Welcoming the Chief Guest and the delegates, Prof. S.R.K. Chopra, Pro-Vice-Chancellor of Punjabi University, said that the Punjabi University had been engaged in the exercise of examination reforms over a period of two years with a view to improving not only the conceptual framework but also the operational aspect of the system. It was encouraging that a large number of universities and other institutions had responded enthusiatically to this Seminar sponsored by the U.G.C., he said. This tremendous response showed the concern of the educational institutions for bringing about the much needed changes in the present system of examinations. He dwelt upon the need of creating confidence in the student-teacher relationship to make any reforms effective and meaningful. He hoped that the deliberations of the Seminar would lead to concrete recommendations to be passed on to the U.G.C. and the Ministry of Education.

Regional Research Institute in Unani at AMU

Mrs. Mohsina Kidwai, Union Minister of Health and Family Welfare, announced the setting up of a Regional Research Institute of Unani Medicine at Aligarh Muslim University. While delivering the inaugural address at the Fourth Scientific Seminar of the Central Council for Research in Unani Medicine, she pointed out that it had become imperative to explore and make the fullest use of all our indigenous systems of medicine.

Mrs. Mohsina Kidwai said that there had been much more research in modern medicine rather than Indian systems of medicines. But modern medicine, with all its advancements, had not been able to provide satisfactory solution to all the health problems of the people.

She pointed out that a nation's well-being depended on the good health of the people. If we wanted to prosper as a nation, we would have to bring about a change in the health strategy in the length and breadth of the country not only to wipe out disease but also to make available essential basic health care to the people at large at their very door steps.

Mrs. Kidwai said that the founder of this esteemed institution, Sir Syed Ahmed Khan, was one of the illustrious educationists, social reformers and statesman. He wanted this institution to serve as a bridge between East and West. Through the past hundred years or more, ever since its establishment, this institution had been successfully keeping up the will of its founder.

She hoped that the Seminar would provide a forum for the participating scientists and researchers of various disciplines to share their knowledge and experiences and enrich them with wealth of information for a meaningful planning of their future strategies and actions leading to a healtheir India.

In his keynote address Dr. Olayiwela Akerele, Programme Manager, Traditional Medicine, World Health Organization, Geneva pointed out that the basic approach of the W.H.O. Programme in traditional medicine was to promote and support the identification of useful elements of traditional medicine into national health systems.

Dr. Akerele said that Unani Tibb had a long and distinguished history dating from the old Arab Civilization. The insight and knowledge gained, he said would be very helpful to him at W.H.O. in trying to promote the beneficial and intelligent use of traditional medicine as a component of national health services.

The Vice-Chancellor of Aligarh Muslim University, Mr. Saiyid Hamid, presided over the inaugural function. He thanked Hakim Abdul Hamid for the handsome donation of 25,000 dollars for establishment of a Regional Research Institute of Unani Medicine at A.M.U., Aligarh.

Hakim Mohd. Abdul Razzack, Director, Central Council for Research in Unani Medicine who delivered the Welcome Address pointed out that the Council which had started functioning in 1979 with a budget of Rupees ten lakhs was now functioning with a budget of about Rs. 124.75 lakhs.

He said that the Council had so far organised three Scientific Seminars and two workshops, one on Standardization of drugs and the other on the role of Unani Medicine in National Population Central and Family Welfare Programme

Youth asked to work for Nation

"Youth of nation will have to come forward to put an end to the prevailing unemployment, exploitation and oppression," said Miss Nirmala Deshpande, Sarvodaya leader.

She was addressing students at the oath taking ceremony of office bearers of University Teaching Departments of Devi Ahilya Vishwavidyalaya, Indore.

She said that while scientific knowledge has led to the bridging of distances, the distance between human beings could not be bridged. This work can only be done by youths, she added.

She said that while people in the affluent countries were becoming victims of insanity and were in constant search of peace and solace, this did not happen in India. The reason for this is the deep-rooted spiritualism in our country.

Miss Nirmala Deshpande said that attempts are being made by some vested interests to sow the seeds of dissention in our country. Youth should be disciplined, patriotic & helpful to the poor. Commenting on the situation in Punjab, she said that those who are encouraging separatism there included youths. It is the duty of other youths to stop the activities of such youths with distructive mentality.

The ceremony was presided over by the Vice-Chancellor, Dr. S.M. Dasgupta, who also administered the oath of office.

Prof. Subba Rao memorial lectures at Osmania Varsity

The Department of Chemistry, Osmania University, under the Special Assistance Programme in Natural Products, organised a programme of six lectures on February 18, 19, 20, 21, 22, 23, 1985. Prof. S.C. Pakrashi of the Indian Institute of Chemical Biology, Jadavpur, Calcutta spoke on "Alangium lamarckii: A versatile source of alkaloids" on February 18. Prof. P.R. Singh, Indian Institute of Technology, Kanpur, spoke on "Novel mechanisms of organic redox reactions" on February 19. Prof. S. Neelakantan, Madurai Kamaraj University, Madurai spoke on "Chemistry of some new isoflavonoi of Dalbergia species" on February 20. Dr. A.V. Rama Rao, National Chemical Laboratory, Pune, spoke on "New approaches to the total synthesis of some biologically active antibiotics" on February 21. Prof. P.S. Radhakrishna Murthy, Berhampur University, Berhampur, spoke on "Kinetics and Mechanistic Studies of Oxidation of some organic substrates" on February 22 and Prof. S. Ranganathan, Indian Institute of Technology, Kanpur, spoke on "The Nitro group: A theoretical look directed at synthetic design" on February 23, 1985.

Ambassador Macioti visits Cochin University

His Excellency Mr. Manfredo Macioti, Head of the Delegation of the Commission of the European Communities for South Asia visited the Cochin University on February 15 and called on the Vice-Chancellor, Dr. K. Gopalan. He familiarized himself with the academic and research activities in the University. He complimented the University on its achievements in several frontier areas of science and technology.

In his discussion with the Vice-Chancellor, Mr. Macioti said that the European Community attached great importance to the Third World Countries in general and to India in particular. Today Europe was virtually the major partner of the South Asian Region in trade, aid, industrial collaboration, finance and tourism. This was due to Europe's consciousness of its inter-dependence with the Third World and a tradition matured through a long historical pro-

CALENDAR OF EVENTS

Proposed Dates of the Event	Title	Objective	Name of the Organising Department	Name of the Organising Secretary/Officer to be contacted
March, 1985	International Ayurvedic Research Seminar on Sexology in Medicine	To cover a wide range on Ayurvedic Research	Institute of Postgraduate Teaching & Research, Gujarat Ayurved University, Jamnagar	Dr. Kulwant Singh, Organising Secretary.
March 4-16, 1985	Executive Development Programme on (UBP-ONGC) Reservoir Engineering	—	Indian School of Mines, Dhanbad	Prof. M. Ramakrishna, Department of Continuing Education, ISM, Dhanbad.
March 13-16, 1985	Workshop on Creative Writing and Performing Arts Festival	To put together leading poets, novelists, dramatists, teachers, researchers and students of literature for a meaningful exchange of views	Faculty of English and Foreign Languages, Gandhigram Rural Institute, Gandhigram	Dr. N. Radhakrishnan, Organising Secretary.
April 12-14, 1985	National Conference on Effective Maintenance for High Productivity	To review recent advances in maintenance management vis-a-vis maintenance practices in industry.	Indian Association for Productivity, Quality and Reliability, Durgapur	Shri Bikash Bhadury, Asstt. Director, Central Mechanical Engg. Research Institute, Mahatma Gandhi Avenue, Durgapur.

cess. The Vice-Chancellor responded by saying that Cochin University had academic and research linkages with some of the European Universities and that the University would be happy to participate in academic and research programmes of mutual interest.

Rabindra Bharati plans course on Folklore

The Rabindra Bharati University is contemplating to introduce a course in Folklore and also set up a museum to preserve old manascript of folklore. This was stated by the Vice-Chancellor, Dr. Ramaranjan Mukherji at the inaugural ceremony of Indian Folklore Congress held at Rabindra Bharati University campus on February 8, 1985. He also said that the course would be prepared to enliven the age old media.

Bihar promulgates ordinance for recruitment of university teachers

The Bihar Government has promulgated an Ordinance to constitute a Commission for appointment of lecturers, readers and professors and all ranks of officers in the universities in the State. The Bihar Universities (Constituent Colleges) Ordinance, 1985 provides that the recommendations made by the Commission would be binding on the universities.

In case of any differences between the Commission and the Universities for appointments, they would be referred to the Chancellor whose decision would be final.

The Commission will be headed by a Chairman having five years experience as a university professor. Besides the Chairman, there will be a six-mimber Board of the Commission and the members will be of the rank of university professors.

The Commission will prescribe criterion for the appointment of lecturers, readers and professors in all the constituent colleges in Bihar and also for all ranks of officers in the universities.

Postgraduate teaching in Engg at Bhagalpur

According to reports, postgraduate teaching in engineering will commence in the Bhagalpur College of Engineering from the next academic session.

Pantnagar Varsity looks ahead

The G.B. Pant University of Agriculture and Technology is proposing to launch courses in Genetic Engineering and Space Agrology. These courses are being taken up to meet the aspirations of the farming community consequent on the rapid technological developments.

The university will take up crop fields survey, monitoring of Pest diseases control, irrigation requirements and underground water resources through use of INSAT under the Space Agrology Programme of the University. A Centre of the Indian Space Research Organisation is being set up at Pantnagar for this purpose.

The University is also establishing a network of regional testing and research station to meet the needs of agro-climatic zones.

A Bachelor of Fisteries Degree Course is expected to begin from the next academic session beginning July, 1985.

The University has established an educational complex "Indralaya" at the campus.

News from Agril. Varsities

Remote sensing training concludes at PAU

A three-day training course on 'Remote Sensing Applications to Land and Water Resources' organised by the Training Unit of the College of Agricultural Engineering and the Department of Soil and Water Engineering of the Punjab Agricultural University, concluded recently. More than 10 officers of the State Departments of Soil Conservation and Engineering and Irrigation and Power and the Directorate of Water Resources, attended the training course.

Presiding over the concluding function, Dr. Sukhdev Singh, Vice-Chancellor of the PAU said the up coming field of remote sensing had a bright future as it could serve as a very useful decision-making tool in crop production. The Vice-Chancellor mentioned that the University was intensifying its efforts in acquiring the latest equipment for weather forecasting to supply reliable information about the coming weather to the farmers. This would enable them plan their farm operations, he added.

Dr. S.R. Verma, Dean of the College of Agricultural Engineering of PAU said that there was a need to strengthen the facilities in this area at the PAU which was so vital for agriculture in this region. Dr. Verma told that similar courses would be organised in future also.

Dr. J.K. Sharma, Associate Professor of Remote Sensing while welcoming the chief guest told that the trainees were educated mainly on the use of the remote sensing data taken with the help of Satellites for studies on various aspects of land and water resources. He mentioned plans for further developing this area in the PAU.

HAU's symposium on current trends in Soil Biology

A two-day National Symposium on "Current Trends in Soil Biology" began at HAU on 28th Feburary. Speaking on this occasion Dr. G. Rangaswami former Vice-Chancellor, Tamil Nadu Agricultural University, Coimbatore, said that nitrogen fixation in soil has recieved most attention is recent years. In view of the diverse role of micro-organism in soil, other soil biological processes also needed to be studied adequately, he said.

Dr. R.P.S. Tyagi, Director of Research, Haryana Agricultural University, Hissar presided over the symposium. Addressing the delegates Dr. Tyagi urged them to take up further studies on various other soil biomass so that all the biological potential of the soil can be understood thoroughly.

This symposium aims at bringing together research workers engaged in the various areas of soil microbiology to discuss the role that microorganisms play in agriculture and to identify some of the emerging problems.

More than 75 delegates from India and abroad are taking part in this symposium.

News from Abroad

Persian clover hay promotes sheep growth

Experiments at an Australian research station have shown that weaner sheep fed on Persian clover hay grew at three times the rate of weaner sheep fed on good-quality grass or sub-clover hay. The experiments were aimed at measuring and comparing the response of animals to several widely different hays and to see how well laboratory tests of the hay could predict animal responses.

Sheep fed on Persian clover hay gained weight at the rate of 156g (5.5 oz) a day; on lucerne hay they gained 93 g (3.3 oz) a day; on good grass/sub-clover hay 50g (1.8 oz); but on average grass/sub-clover hay and on caten hay they gained no weight during the experiment.

The weaner steers fed Persian clover gained 690g (24.3 oz) a day; on lucerne hay 500g (17.6 oz); on grass hay 300g (10.6 oz) and on caten hay 800g (28.2 oz).

The Persian clover hay was found to have a higher digestibility and lower fibre content than the other hays. The researchers also found that sheep and steers ate more of the Persian clover than the other feeds.

Persian clover hay could be a valuable cash crop and its regrowth remained highly nutritious long after it matured. Persian clover had a high tolerance to waterlogging and could be used in intense cropping rotations to increase soil nitrogen levels and subsequent crop yields.

[Courtesy: Australian Information Service : Agricultural Newsletter]

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THESES OF THE MONTH

A list of Doctoral Theses Accepted by Indian Universities

HUMANITIES

Philosophy

1. Kiyoshima, Hideki. *Indian philosophy of language with reference to the Vakyapadiya* ((*II chapter*). U Delhi.

2. Yadav, Ramdhyan Prasad. *A critical study of the concept of avidya with reference to Buddhism and Vedanta.* Mag U, Bodh Gaya.

Religion

1. Harbans Singh. *The Doctrine of Degh...Tegh as a socio-economic ideal in Sikh thought.* Pb U, Chandigarh.

Fine Arts

Drawing & Painting

1. Bairathi, Krishna. *Rajasthani laghu chitron mein bhoo drishva chitran.* U Raj, Jaipur.

2. Saxena, Mahendra Kumar. *Bareily Jile kee lok kala.* Garhwal U, Srinagar.

Music

1. De, Suresh Chandra. *Integration of yoga system and musical pattern toward realisation of Nada-Brahman.* RBU, Calcutta.

Language & Literature

English

1. Chugh, C.L. *Indian autobiographies in english in the 19th and 20th centuries.* Bhopal U.

2. Gopinath, Jayalakshmi. *The legend the imagery and symbolism of Sri Aurobindo's Savitri.* SSIHL, Prasanthinalayam.

3. Sharma, Sushil Kumar. *The search for belief in the novels of Graham Greene.* Kurukshetra U.

4. Yashpal Kaur. *The craft of fiction in Anita Desai.* Pb U, Chandigarh.

Sanskrit

1. Agnihotri, Mahesh Dutt. *Sanskrit sahitya mein Ardhnarishwar.* H.S. Gour, Sagar.

2. Arya, Praphull. *Bharatiya darshan mein Paramanuveda.* Kurukshetra U.

3. Ashok Kumar. *Editing and a study of the Akasaseni Panktika of Meghaduta by Kalidasa.* Kurukshetra U.

4. Jain, Kiran Kala. *Syadvedmaniari : Ek sameekshatmak adhyayan.* Kurukshetra U.

5. Jain, Pramila. *Shatkhandagam mein gunsthanon ka swarup.* RDV, Jabalpur.

6. Jha, Chandra Kishore. *Bhartiya jyotish ka vaigyanik vivechan.* D.Litt KS Darbhanga.

7. Jha, Shivendra. *Gurushukrayorudayastadi vichar vivahopanayanadi sanskaretprabhavashch.* KS Darbhanga.

8. Mishra, Mohna Nand. *Sanskrit bhasha ka samajik itihasik aur puratattvik adhyayan.* KS Darbhanga.

9. Narayanrao, Joshi Mahadev. *Treatment of seculararts and sciences in Somesvara's Manasollasa.* Kar U, Dharwad.

10. Pande, Ratna Das. *A critical study of the Panchatantra.* U Calcutta.

11. Seetha Rama Sastry, Mullapudi Jaya. *The elements of darsanas of Sri Harsha's Naishadha.* Andhra U, Waltair.

12. Sharda Prasad. *Yagyabalkya shiksha: Ek alochanatmak adhyayan.* Avadh U.

13. Shreshtha. *Shivasatotravali evam Satutikusumanjali ke sahitiyak tatha darshnik pakshon ka tulnatmak adhyayan.* Pb U, Chandigarh.

14. Shrivastava, Neerja. *Dingnag virchit Kundmala ka sameekshatmak adhyayan.* Avadh U.

15. Shukla, Neelima. *Kumarsambhav ke paryayon ka ardhtattvik adhyayan.* RDV, Jabalpur.

16. Singh, Jagat Bahadur. *Aitreya Brahman ka sanskritik adhyayan.* HS Gour, Sagar.

17. Singh, Ramchandra Prasad. *Ayurved mein parad evam gandhak ka prayog: Ek adhyayan.* KS Darbhanga.

18. Vir Ranjan. *Somrajji ka vibhinna krimiyon per adhyayan.* KS Darbhanga.

19. Vishwakarma, Avadh Kishore. *Faqq rog vivechanam.* KS Darbhanga.

Pali

1. Prasad, Radhe Shyam. *Vinaykaleen Bharati kee samajik evam sanskritik chetna.* Mag U, Bodh Gaya.

Punjabi

1. Dulai, Narinderjit Kaur. *Teaching of Punjabi to hindi speakers.* Kurukshetra U.
2. Narinder Singh. *Punjabi literary historiography: A critique.* U Delhi.
3. Rajinder Singh. *Harbhajan Singh kavya-alochanatmak adhyayan.* Kurukshetra U.

Hindi

1. Bhattacharya, Ramendra Narayan. *Balmiki Tulsidas kritivaski Ramkatha mein Bharat charitra kee visheshta.* BKU Jhansi.
2. Chauhan, Yash Pal Singh. *Samakaleen kahani kee varga chetna.* JNU, Delhi.
3. Desaraju Pratap. *A comparative study of the treatment of the character 'Radha' in medieval hindi and telugu poetry.* Andhra U, Waltair.
4. Dube, Om Prakash. *Sur ka saundarya bodh.* Avadh U.
5. Jat, Jagdish Prasad. *Veesaldev Raso ka kavya shastriya adhyayan.* U Raj, Jaipur.
6. Joshi, Shiv Dayal. *Garhwal lok geeton mein ras yojana.* Garhwal U, Srinagar.
7. Joshi, Vijai Bala. *Garhwal Naresh Maharaja Fatehsingh ke pramukh darbari kaviyon kee hindi sahitya ko den.* Garhwal U, Srinagar.
8. Kishore, Urmila. *Hindi Ram kavya mein Bharat ka swarup.* BKU, Jhansi.
9. Magarde, Khemraj. *Upendranath Ashk ke hindi natak: Ek Adhyayan.* Bhopal U.
10. Narayanswami, S. *Ajwaron aur ashthchhapion kee bhakti evam kritiyon ka tulnatmak adhyayan.* Nagpur U.
11. Pandey, Madhav Prasad. *Sant sahitya mein paribhashik shabdavali.* Avadh U.
12. Ramteke, Preeti Prafullchandra. *Amritrai ke sahityik krititva ka vishleshanatmak anusheelan.* Nagpur U.
13. Sharma, Shreeprabha. *Sanskritik pratimanon ka pariprekshya mein Acharya Hazari Prasad Dwivedi ke upanyas.* U Raj, Jaipur.
14. Sharma, Sneh. *Padam Shri Raghuvir Sharan Mitra ke katha sahitya ka samalochanatmak adhyayan.* U Raj, Jaipur.
15. Singh, Roopnarayan. *Ram tattwa ka vikas aur Tulsidas.* Avadh U.
16. Sisodia, Gajraj Singh. *Bijnour Janpad ke lokgetton ka sanskritik evam kalaparak anusheelan.* Garhwal U, Srinagar.
17. Vashishta, Krishna. *Yashpal ke jeevan mulya.* U Raj, Jaipur.

Bengali

1. Bandyopadhyay, Ranjit Kumar. *Rabindra Kavya-o-Shakti.* U Calcutta.
2. Bhattacharya, Amarnath. *Saratchandra-o-pratibeshi sahitya, Hindi-Oriya-Asamiya.* RBU, Calcutta.
3. Bhowkich, Nirmalendu. *Pranta Uttar Banqar upobhasa.* D.Litt. RBU, Calcutta.
4. Ghosal, Jayanta Kumar. *Bangla upanyase samaj bastabata: Bankimchandra, Rabindranath, Sarat Chandra, Tarasankar.* U Calcutta.
5. Kar, Sisir Kumar. *Ingrej Amale nishiddha bangla pustak.* U Calcutta.
6. Maiti, Bankim Chandra. *Dakshin-Paschim simanta Banglar dharma-o-sahitya.* U Calcutta.
7. Majumdar, Dilip Kumar. *Bangla pragati lekhak andoloner pratham paryay-o-somenchanda.* RBU, Calcutta.

Oriya

1. Panigrahi, Kumud Ranjan. *Odiya sahityare Rama prasanga: Eka adhyayana, 15th century to 1850 A.D.* Sambalpur U.

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Area Planning for Regional Development, by K. MUNIRATHNA NAIDU (ed.); 1984; viii, 144p.; 4 Statements; 12 Tables; Index; 26cm.; Rs. 140/- $28.

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INTER-INDIA PUBLICATIONS

WZ-96-V, Raja Garden, NEW DELHI-110015.

2. Rath, Sarat Chandra. *Oriya reeti sahitya O' Dhananjaya bhanja*. Utkal U, Bhubaneswar.

3. Sahu, Kalpataru. *Religious aspects of Sarala literature.* Utkal U, Bhubaneswar.

Tamil

1. Arumugam, P. *An assessment of the works of Mahavidwan Meenakshi Sundaram Pillai with special reference to the puranas written by him.* SVU, Tirupati.

Telugu

1. Chiruvolu, Syamala Devi. *The characterisation of important lady characters in the novels of Vishwanadha Satyanarayana.* Andhra U, Waltair.

2. Simmanna, Velamala. *Adivi Bapiraju kathanikalu kavitvamu.* Andhra U, Waltair.

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Geography

1. Murali Mohan Rao, E.V. *Spatial analysis of rainfall, landuse and cropping pattern in Karnataka.* SVU, Tirupati.

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History

1. Chakraborty, Rabindra Nath. *Studies in the socio-economic and cultural contact between Orissa and Bengal from the Tenth Century A.D. to the Sixteenth Century A.D.* Sambalpur U.

2. Chander, Alka. *Sir C. Sankaran Nair : A political biography.* Kurukshetra U.

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6. Mitra, Sumitra. *The freedom movement of Sadar Sub District of Manbhum District from* 1920-1947. RBU, Calcutta.

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13. Siridhanavankura, Maha Chamras. *Political history of Indo-China, from earliest time to* 1431 *A.D.* Mag U, Bodh Gaya.

14. Vatts, Meenlochna. *Politics and society in Delhi,* 1920-1934. Kurukshetra U.

ADDITIONS TO AIU LIBRARY

Adiseshiah, Malcolm and Shah, Gunvant. *Educational technology.* Surat, Indian Association for Educational Technology. 80p.

Ambile, Teresa M. *Social psychology of creativity.* New York, Springerverlag, 1983. xiii, 241p.

Andhra Pradesh Open University, Hyderabad. *Chemistry : Inorganic chemistry, organic chemistry:* Units 1-3. Hyderabad, Author, 1984. 109p.

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21. Assistant Professor (Agril. Engineering) : (One) : (Discipline-Agril.) Engineering with specialisation in Soil & Water Engineering).

(**Note** : For posts at Sr. Nos. 17 to 21 and 42 reservation will be as under: Scheduled Caste-2, Backward Classes-7, Ex. Servicemen-2).

22. Assistant Scientist (Agril. Economics) : (One) : (Discipline-Agril. Economics) (Reserved for Scheduled Castes):

23. Junior Gynaecologist : (Dept-Animal Breeding) : (One) : (Discipline-Vety. Gynaecology and Obstetrics)

24. Assistant Scientist (Vety. Physiology) : (Two) : (Discipline-Vety. Physiology)

25. Assistant Research Officer (Vety. Physiology) : (One) : (Discipline-Vety. Physiology with experience in RIA of Hormones)

26. Assistant Professor (Vety. Physiology) : (Two) : (Discipline-Vety. Physiology)

27. Assistant Animal Gynaecologist: (One) : (Discipline-Vety. Gynaecology & Obstetrics) : (Note : For posts at Sr. Nos. 23 to 27 reservation will be : Backward classes-2, general-5).

28. Assistant Immunologist (Vety. Microbiology) : (One) : (Temporary upto 28-2-87 but likely to continue) (Vety. Microbiology).

29. Assistant Scientist (Vety. Microbiology) : (One) : (Temporary upto 28-2-87 but likely to continue) : (Discipline-Biochemistry / Molecular Biology/Medical Microbiology/Vety. Microbiology).

30. Assistant Professor (Vety. Pharmacology) : (One) : (Discipline-Vety. Pharmacology) (Reserved for Backward classes).

31. Assistant Virologist (Vety. Microbiology) : (One) : (Temporary upto 28-2-87 but likely to continue) (Discipline-Vety. Microbiology)

32. Junior Animal Nutritionist: (One) (Discipline-Animal Nutrition).

33. Assistant Scientist (Poultry Technology) : (One) (Temporary upto 28-2-87) : (Discipline-Poultry Technology.)

34. Assistant Animal Nutritionist : (One) : (Discipline-Animal Nutrition)

35. Junior Animal Health Scientist: (One) : (Discipline-Vety. Medicine or in any related discipline)

(Note : Posts at Sr. No. 32 to 35 are reserved for Scheduled Castes)

36. Assistant Food Technologist 1. (One): (Reserved for Scheduled Castes) (Discipline-Food Technology Analytical Chemistry).

37. Assistant Professor (Zoology) : (One) : (Reserved for Scheduled Castes). Discipline-Zoology with specialisation in Ornithology/Environmental Physiology/Earthworm Ecology).

38. Assistant Biochemist : (One) : Reserved for Scheduled Castes). Discipline-Biochemistry) (Temporary upto 28-2-87.

39. Assistant Research Officer (Biochemistry) : (One) : (Reserved for Backward Classes) (Discipline-Biochemistry)

40. Assistant Scientist (Biochemistry): (One) : (Discipline-Biochemistry) (Reserved for Scheduled Castes)

41. Assistant Professor (Clothing & Textiles) : (One): (Reserved for Scheduled Castes). (Discipline-Clothing & Textiles).

Qualifications for the Posts at Sr. Nos. 17 to 41.

(i) Second class at Bachelor's level in the respective faculties i.e. for posts at Sr. Nos. 17 to 20 & 22: B.Sc. (Ag.) preferably B.Sc. (Hons) Agri. for post at Sr. No. 21 : B.Sc. (Ag. Engg./B.Tech.), for posts at Sr. Nos. 23 to 31 : B.V. Sc. & A.H., for posts at Sr. Nos. 32 to 35: B.V.Sc. & A.H. /B.Sc. (Dairying/) B.Sc. (Animal Science)/B.Sc. Agri. (with elective in Animal Science), for posts at Sr. Nos. 36 to 40; B.Sc./B.Sc. (Agri.), for post at Sr. No. 41 : B.Sc. (Home Science).

(ii) Master's degree in the first class or with an OGPA of not less than 3.2/4.00 or equivalent in the disciplines mentioned against each post OR atleast second class Master's degree followed by Ph.D. in the disciplines mentioned against each post.

42. **Assistant Extension Training Specialist** : (One) : (i) Second class B.Sc. (Agr.)/B.Sc. (Hons.) Agri. (ii) M.Sc. (Agri.) in Extension Education/Agriculture Extension Education in 1st class or with an OGPA of not less than 3.2/4.00 or equivalent OR atleast second class M.Sc.(Agri.) Extension Education followed by Ph.D. in Extension Education.

43. **Assistant Professor (Hindi & Haryanvi Culture)** : (One) : (Reserved for Ex-Servicemen) : **Essential** : (i) Second class B.A. with Hindi, (ii) First class M.A. in Hindi OR atleast second class M.A. followed by Ph.D. in Hindi Literature **Desirable** : Sound knowledge of Sanskrit, Haryanvi Folklore and Culture.

44. **Assistant Professor (English)** : (Leave vacancy upto 4-9-86) : (Reserved for Scheduled Castes) : (i) Atleast 2nd class at Bachelor's level. (ii) Master's degree in the first class or atleast second class Master's degree (English) followed by Ph.D. **Desirable** : Knowledge of Hindi for guiding students in translation.

Note

1. For posts at Sr. Nos. 1 to 15, the minimum experience of 5 years and 10 years (including 5 years as an Associate Professor) is required for the post of Associate Professor and Professor respectively. The above experience will be counted after a candidate obtains his M.Sc. degree. Further a period of 3 years towards obtaining Ph.D. degree shall be excluded from the experience.

2. The qualifications regarding experience are relaxable at the discretion of the competent authority in the case of candidates belonging to the Scheduled Castes or Scheduled Tribes, if at any stage of selection, sufficient number of candidates from those communities possessing the requisite experience are not likely to be available to fill up the vacancies reserved for them.

3. In case the reserved category candidates are not available for the posts reserved for them (except posts at Sr. Nos. 22, 30, 40 and 41) such posts shall stand de-reserved and will be filled up out of the general category candidates. The candidates belonging to reserved categories who have applied in response to earlier advertisement for these posts, need not apply again.

4. Special weightage will be given to extension experience possessed by the candidates for posts in disciplines amenable to extension.

5. For posts at Sr. Nos. 17 to 44 (except post at Sr. No. 22) : persons who do not possess Ph.D. at the time of their selection shall not be allowed to cross the stage of Rs. 1300/- in the scale of Rs. 700-40-1100-50-1600, till they complete their Ph.D.

6. Number of vacancies mentioned against each post can vary.

Pay Scale

Sr.No. of post	Pay Scale	Total emoluments at the initial of the Pay-Scale (exclusive of House Rent)
1	Rs. 3000 plus allowances on UGC pattern	Rs. 5150.00
2 to 6	Rs. 1500-60-1800-100-2000-125/2-2500 (UGC scale)	Rs. 2790.00
7 to 15	Rs. 1200-50-1300-60-1900 (UGC scale)	Rs. 2445.00
16	Rs. 1500-60-1920-80-2000 (State Govt. pattern scale)	Rs. 2427.00
17 to 44	Rs. 700-40-1100-50-1600 (UGC Scale)	Rs. 1662-00

REGISTRAR

BHAGALPUR UNIVERSITY

BHAGALPUR-812007

Advertisement Notice

Applications on plain paper are invited from Indian citizens for preparation of Panel for purely temporary appointment to the posts of lecturers in the present scale of pay of Rs. 0-70 40-1100-50-1600 plus other allowances admissible under the rules of the Bhagalpur University in the following subjects.

Hindi, English, Sanskrit, Urdu, Persian, Maithili, Bengali Philosophy, Santhali, Pali, Economics, Political Science, History, Psychology, Sociology, L.S.W., A.I.H. & Culture, R.Ec. & Co-operation, Anthropology, Geography, Gandhian Thought, Home Science, Music, Botany, Zoology, Chemistry, Mathematics, Physics, Statistics, Geology, Commerce.

Minimum Qualifications

(a) A doctorate's degree or research work of an equally high standard; and

(b) Good academic record with at least second class (C in the seven points scale) Master's degree in a relevant subject from an Indian University or an equivalent degree in (a) and (b) above may be in relevant subjects.

Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his Thesis or from his published work is of very high standard, may relax any of the qualifications prescribed in (b) above.

Provided further that if a candidate possessing a doctor's degree or equivalent research work is not available or is not considered suitable, a person possessing a good academic record (weightage being given to M.Phil or equivalent degree or research work of quality) may be appointed, provided he has done research work for at least two years or has practical experience in a research (laboratory) organisation on the condition that he will have to obtain a doctor's degree or give evidence of research of high standard within eight years of his appointment, failing which he will not be able to earn future increment until he fulfils these requirements.

Minimum Qualification for the Post of Lecturer in Music and Fine Arts

(a) Good academic record with atleast second class (C in the seven points scale) Master's degree in a relevant subject or an equivalent degree or diploma recognised by the University; and

(b) Two years research or professional experience or evidence of creative work and achievement in his field of specialisation or a combined research and professional experience of three years in the field as an artist of outstanding talent.

OR

A traditional or professional artist with highly commendable professional achievement in the subject.

For determining "good academic record" the following criteria should be adopted.

(i) A candidate holding a Ph.D. degree should possess at least second class master's degree; or

(ii) A candidate without Ph.D. degree should possess a high second class Master's degree and second class in the bachelor's degree: or

(iii) A candidate not possessing Ph.D. degree but possessing a second class Master's degree should have obtained 1st class in the bachelor's degree.

Appointments in each faculties shall be made on the basis of the Roster of Reservation as approved by the Govt.

Separate application for each post accompanied with attested copies of marksheets and degrees from Matriculation and onwards with a fee of Rs. 10/- (Rs. 2.50 for SC/ST) in shape of crossed I.P.O's payable to the Registrar, Bhagalpur University, Bhagalpur-812007 must reach the undersigned by 4 p.m. on or before **15-3-1985.**

No T.A./C.A. will be admissible for attending the interview, if called for.

A.P. Sinha
REGISTRAR

GURU NANAK DEV UNIVERSITY

AMRITSAR

Advertisement No. 6/85

Applications are invited for the following posts on prescribed form obtainable at a price of Rs. 2/- from the office of the Registrar by making written request accompanied by self-addressed stamped envelope of 23 × 10 cms. so as to reach this office by 18-3-1985 alongwith crossed Indian Postal Order(s) of Rs. 10/- for the posts at Sr. No. 1 to 35 and Rs. 5/- for other posts (not refundable) drawn in favour of the Registrar, Guru Nanak Dev University, Amritsar.

Persons already in employment must send their applications through their employers. Candidates from within India may not be considered in absentia. Higher start in the grade may be given depending upon qualifications and experience.

The qualifications for the posts of Professors, Readers and Lecturers are as prescribed by the University Grants Commission.

Professors (Grade : Rs. 1500-60-1800-100- 2000-125/2-2500)

1. Biology—1
2. Chemistry—1
3. Electronics Technology—1
4. Punjab School of Economics—1
5. Guru Ram Dass Post Graduate School of Planning—1 (Temporary but likely to continue)
6. Mathematics—1
7. School of Punjabi Studies (Language)—1
8. Sociology—1

Readers : (Grade : Rs. 1200-50-1300-60-1900)

9. Chemistry—2
10. Electronics Technology—3
11. Punjab School of Economics—1
12. English—1
13. Guru Nanak Studies—1 (Philosophy of Religion)
14. Laws—1
15. Mathematics—1
16. Political Science—2 (One temporary, but likely to continue)
17. School of Punjabi Studies (Folk Studies)—1
18. Physical Education—1
19. Sanskrit—1

Lecturers (Grade : Rs. 700-40-1100-50-1600)

20. Biology—5 (Two regular three temporary but likely to continue).
21. Chemistry—5 (Three temporary, but likely to be made permanent).
22. Physics—3 (One temporary)
23. Electronics Technology—1
24. English—2
25. Guru Nanak Studies—2 (One for Philosophy and one for Sociology).
26. Guru Ram Dass Post Graduate School of Planning—1
27. Laws—2
28. Mathematics—2
29. School of Punjabi Studies (Folk Studies)—2
30. Sociology—2
31. Persian—1

Regional Centre, Jalandhar

32. Lecturer in English-1

33. **Job Oriented Courses**
    (i) Chemistry-4 (Temporary, but likely to continue)
    (ii) Computer-Science-2

University Office

34. Assistant Registrar-1 (Temporary, but likely to continue). (Grade : Rs. 940-30-1000-40-1200/50-1400/60-1700-75-1850 plus Rs. 100/- special pay).

35. **Research Fellow**
    Mathematics—1 (Rs. 600/- fixed p.m.)

University Engineering Deptt.

36. Road Inspector (Grade : Rs. 400-10-450/15-525/15-600)
37. **Laboratory Attendants**-2 (Grade : Rs.400-10-450/15-525/15-600).
    (i) Biology—1
    (ii) Physics—1

University Press

38. Machineman (Grade : Rs. 400-10-450/15-525/15-600)

Qualifications/Specialisations

For the post at Sr. No. :

Molecular or cell Biology/Genetics.

Sr. No. 2

Any area of Pure or Applied Chemistry

Sr. No. 3

(i) Ph.D. in Electronics Communication Engineering with 10 years experience.

OR

(ii) An eminent scholar with published work of high quality; actively engaged in research. Ten years' experience of teaching and/or Research. Experience of guiding research at doctoral level or an outstanding scholar with established reputation who has made significant contribution to knowledge.

Sr. No. 4

Same as mentioned at Sr. No. 3 (ii) above.

Sr. No. 5

Essential

(i) Bachelor's Degree/equivalent professional qualification of a recognised University/Institution in related disciplines of Architecture/Civil Engineering; OR Master's Degree OR equivalent Post graduate qualification of a recognised University/Institution in disciplines of Geography/Social Science/Economics.

(ii) Master's Degree/equivalent postgraduate professional qualifications of a recognised University/Institution ia Town and Country Planning;

(iii) Independent Professional/Published work of High Standard ; and

(iv) At least ten years experience in Professional/teaching/research work, in a faculty/responsible position in Town and Country Planning, with abilities to conduct and guide research and/or undertake design/development work.

Desirable

(i) Membership of the professional Institute of Town Planners ; and

(ii) Specialisation/Research experience in certain areas/subjects in Town and Country Planning.

Sr. No. 6

Pure Mathematics.

Sr. No. 7

Linguistics with specialisation in the study of Punjabi Language.

Sr. No. 9

(i) Solid State/Theoretical Chemistry.

(ii) Industrial / Applied Chemistry/ Synthetic organic Chemistry

Sr.No. 10

Essential

(i) Ph.D. Degree in Electronics and Communication Engg./Electrical Engg. with minimum experience of 3 years in teaching and/or research in a University and/or institute of repute.

OR

First Class Master's Degree in Electronics and Communication Engg./ Electrical Engg. with minimum 5 years experience in teaching and/or Research in a University and/or Institute of repute.

(ii) Specialised knowledge in Instrumentation/Computer Technology/Communication Engg/Control systems.

Sr. No. 11

Regional Planning/Industrial Economics.

Sr. No. 12

Language Teaching

Sr. No. 13

(i) M.A. Philosophy

(ii) Doctoral thesis in Philosophy of Religion

(iii) Five years experience of Post-Graduate teaching or research (may be relaxed in case of candidates with outstanding post doctoral research work).

Sr. No. 14 and 27

Specialisation in the following three areas:

(i) Constitutional Law
(ii) Criminal Law
(iii) Cmmercial Law

Sr. No. 15 and 28

In the thrust areas Operations Research and Computer Mathematics.

Sr. No. 17

Specialisation in the study of Folklore of the Punjab/Ph.D. with M.A. in Literature/Cultural Anthropology/History of Art/History/Sociology/Anthropological Linguistics.

Teaching and Research experience in the study of Punjabi Folklore.

Sr. No. 18

(i) Achievements at the international/ national/Inter University competitions in Athletics/Gymnastics/Games and Sports as per I.U.S.B. Schedule.

(ii) Specialisation in sports Medicine/ sports Training/Tests and measurements in Physical Education/Sports Psychology/Research Methodology in Physical Education/sports.

(iii) Guiding Research for M.P.Ed./ M.Phil./Ph.D. Students in Physical Education.

(iv) Teaching experience of atleast 5 years in University Departments of Physical Education/College of Physical Education.

Sr. No. 19

(i) M.A. Ph.D. with oriental qualifications (Sahitya Charya) in Veda/ Puran/Ancient Indian Cultural History/ Indian Philosophy/Linguistics.

(ii) 5 years Research/P.G. teaching experience in Sanskrit.

(iii) The eminent scholar well-versed in Manuscriptology/epigraphy will be preferred.

Sr. No. 20

Molecular Biochemistry/Enzymology/ Bacteriology/Vriology/Human Biology/ Environmental Biology/Developmental Biology/Experimental Biology/Physiological and Developmental Botany or any other modern discipline.

Sr. No. 21

For the First Post

Industrial/Applied Chemistry

For the Second Post

Physical Chemistry/Organic Chemistry.

For the Third, Fourth and Fifth Post

(a) M.Sc., Ph.D. in Chemistry with Specialisation in Oils.

(b) M.Tech.*/M.Sc. (Chemical Technology or Chemical Engineering) or M.Sc. Applied/Industrial Chemistry with experience of working in Industry.

(c) M.Sc., Ph.D. in Chemistry with specialisation in Analytical Chemistry/ Instrumental Methods of Analysis.

*In case suitable candidates with M.Tech. degree are not available or found unsuitable, first class B.Tech. candidates will be considered. However, they will have to obtain M.Tech. degree within five years from the date of joining as Lecturer.

Sr. No. 22

Radiation Physics, Solid State Physics (experimental), Spectroscopy, Electronics.

Sr. No. 23

Essential

Master's degree in Electronics & Communication Engineering/Electrical Engineering with specialisation in Instrumental/Computer Technology/Control System/Communication Engg.

In case suitable candidates with Master's degree are not available or found unsuitable, first class B.Tech./ B.E. in Electronics & Communication Engineering/Electrical Engineering will be considered. However, they will have to obtain Master's degree in the relevant field within five years.

Sr. No. 24

Language Teaching/Linguistics & Phonetics.

Sr. No. 25

For Philosophy

Essential

(i) M.A. in Philosophy

(ii) Doctoral thesis on Comparative Philosophy of Religion.

For Sociology

(i) M.A. in Sociology;

(ii) Doctoral thesis on Sikh Religious practices

Desirable for these posts

Teaching experience of post-graduate classes or post doctoral research.

Sr. No. 26

Essential

Master's degree or post-graduate diploma in Urgan and Regional Planning or Allied field such as Housing/ Traffic and Transportation Planning.

Desirable

(i) Atleast one year experience in teaching/research/professional work in Town and Regional Planning.

(ii) Associate membership of institute of Town Planners.

(iii) Basic qualification of B.E. (Civil) or B.Arch.

Sr. No. 29

Folkloristics with specialisation in the study of Folklore of Punjab/Ph.D. with Master's Degree in Literature/ Cultural Anthropology/History of Art/ History / Sociology / Anthropological Linguistics. Experience and knowledge of methods of field work.

Sr. No. 30

(i) Social Demography;

(ii) Industrial Sociology.

Sr. No. 32

Preferably Linguistics.

Sr. No. 33

(i) Textile Chemistry/Paper and Pulp Technology/Paints and Varnishes.

M.Tech.* in Textile Chemistry/Paper and Pulp Technology/Paints andv Varnishes.

*In case suitable candidates with M.Tech. degree are not available or found unsuitable, first class B.Tech. candidates will be considered. However, they will have to obtain M. Tech. degree within five years from the date of joining as Lecturer.

(ii) A Doctorate Degree in Computer Science or in any relevant branch of Science of Engineering with some teaching and research in Computer Science.

OR

M.Tech. with one year or M.Phil with two years experience in teaching or research in Computer Science subjects. These qualifications may be relaxed if no suitable persons is available..

Sr. No. 34

M.A. or B.A.LL.B., knowledge of Punjabi upto Matric standard, Ten years experience in a University/Corporate Body/Govt. Office; two years' experience as Superintendent (Grade-I) or equivalent.

Sr. No. 35

First or High Second Class Master's degree in the relevant subject and good academic record, aptitude for research.

Sr. No. 36

Matric with 5 years experience as Road Inspector.

Sr. No. 37

(a) Matric with Science.

(b) The candidates who have already worked in some scientific laboratory will be given preference.

Sr. No. 38

Middle with five years experience. Experience in printing of books, journals, job work, colour work on Tradle/Cylinder machine in a reputed press will be preferred.

Note

The number of posts can be changed at the discretion of the University.

Lakha Singh Sandhu
REGISTRAR

THE UNIVERSITY OF JODHPUR

(Establishment Section)

ADVERTISEMENT NO. 132/85

Applications are invited for the following post:

Officer-in-Charge : In Rural Housing Wing (one post, temporary likely to be made permanent).

Pay Scale : Rs. 1200-50-1300-60-1900 plus other allowances as admissible in the UGC scale of the University of Jodhpur.

Qualifications

(i) A first or high second class bachelors degree in Civil Engineering of an Indian University or equivalent qualification of a foreign University in the subject concerned.

(ii) Experience of teaching and/or Professional experience for six years.

Desirable

(i) Post graduate degree and/or Research experience.

(ii) Experience of planning and designing of clusters of demonstration houses in Rural Areas.

(iii) Published work of merit.

The application forms for the above post can be obtained from the office of the undersigned for which a crossed Indian Postal Order for Rs. 5/- endorsed in favour of the Registrar, University of Jodhpur payable at Jodhpur be sent alongwith a self-addressed envelope of 24×11 cms. size bearing postage stamps of Rs. 4.35 paise. No fee shall be charged from SC/ST candidates. The last date for receipt of applications complete in all respects is 25th March, 1985.

Preference will be given to SC/ST candidates, if found suitable.

No TA and DA will be admissible to the candidates for attending the interview.

P.S. Bhargava
REGISTRAR

UTKAL UNIVERSITY

Vani Vihar Bhubaneswar-751004

Advertisement No. Estt. I/886-C/VI-Plan/A5690/85 Dated 26-2-1985.

Applications in Seven copies are invited in the prescribed form alongwith attested copies of Certificates and Mark lists of all examinations passed (Honours at the Degree stage in the concerned subject) for the following posts in the Post-Graduate Departments of the University on or before the **18-3-85** subject to the following conditions.

1. The University reserves the right to reject any or all applications without assigning any resaon thereto.

2. No Deputation Allowance will be paid to the persons holding lien in Govt. Leave salary and pension contribution may be paid only for two years.

3. A panel of selected candidates will be maintained to be valid for one year from the date of Selection.

4. No T.A./D.A. will be paid to attend the interview and join the first appointment.

5. No applications will be entertained after the last date.

1. Psychology. : Professor—one.

Specialization : Social or Developmental Psychology.

(N.B. The Selection Committee has been scheduled to be held on **28-3-85 at 11.00 A.M.** in the University Office. Candidates are advised to attend interview for which no separate intimation will be sent).

2. Library & Information Science. Professor—One.

Specialization : Candidates already applied as per advertisement No. Estt. I/886-C/VI-P/A/-2457/85. Dt. 6-2-85 need not apply again.

Any retired person within the age of 62 years for entry (Maximum superannuation age for employment being 65 years) may also apply for reemployment on contract basis (salary acceptable for such personnel may please be specifically mentioned).

1. **Scale of Pay :** (i) Professor : Rs. 1500-60-1800-100-2000-125/2-2500/-

2. **Age of Superannuation :** 60 (Sixty) years (Except on Contract).

Essential Qualification : Professor.

An eminent scholar with published work of high quality. Actively engaged in research. Above Ten Years' experience of Teaching and/or Research. Experience of guiding research at Doctoral level, OR

An outstanding scholar with established reputation who has made significant contribution to knowledge.

Prescribed application forms can be had from the Information Counter, Utkal University, in person, on payment of Rs. 7.60 including local sales tax (Rupees seven and paise sixty only) or by post on receipt of a Crossed Indian Postal Order for Rs. 10/- (Rupees ten only) payable to The Finance Officer, Utkal University, Vani Bihar, Bhubaneswar-751004.

REGISTRAR

ANNAMALAI UNIVERSITY

Annamalainagar,

DEPARTMENT OF BUSINESS ADMINISTRATION

Applications are invited in the prescribed form for filling up of the post of Professor of Business Administration. Applications can be had from the undersigned on payment of Rs. 10/- (not refundable) by cash/by money order/by Postal Order. Applications (with 5 additional copies) should reach the undersigned on or before **16th March, 1985.**

Scale of Pay:

Rs. 1500-60-1800-100-2000-125/2-2500 with usual allowances.

Qualification

A person with a distinguished academic record with Doctoral Degree and with 10 years of experience of teaching at Post-Graduate level and of guiding research at Doctoral level with publications of quality to his credit.

OR

An eminent scholar with published work of high quality actively engaged in research. Ten years' experience of teaching and/or research. Experience of guiding research at Doctoral level.

Such of those who are already in service should route their applications through the proper channel.

A.R. Lakshmanan
REGISTRAR

UNIVERSITY OF GORAKHPUR
GORAKHPUR

No. 18487/Gen. (Admn.)/85

Dated : February 21, 1985

Advertisement No. 7

The University Requires:

(a) Permanent Professor : One in Sanskrit.
(b) Permanent Readers : Two in Law.
(c) Permanent Lecturers : One each in English, Political Science, Economics, Commerce, Education, Statistics and Physics.
(d) Temporary Lecturers : One each in Education and English.
(e) Director (Temporary) : One in Department of Adult Continuing and Extension Education.
(f) Asstt. Director (Temporary) : One in Adult Education.
(g) Asstt. Director (Temporary) : One in Continuing Education.
(h) Project Officer (Temporary) : One in Population Education.

Pay Scales

For Professor : Rs. 1500-60-1800-100-2000-125/2-2500.

For Readers : Rs. 1200-50-1300-60-1900.

For Lecturers : Rs. 700-40-1100-50-1600.

For Director (A.C.& E.E.) : Rs. 1500-60-1800-100-2000.

For Asstt. Directors (Adult Continuing Edn) : Rs. 1100-50-1600.

For Project Officer (Population Education) : Rs. 700-40-900-E.B.-40-1100-50-1300.

Plus D.A. according to rules.

Qualifications and Requirements

For Professor

Either

Eminent scholar with published work of high quality and active engagement in research and ten years experience of teaching or research and experience of guiding research at doctorate level;

Or

Outstanding Scholar with established reputation for significant contribution to knowledge.

For Readers

(i) Good academic record with a doctorate degree or equivalent published work, and active engagement in research or innovation in teaching methods or publication of teaching materials; and

(ii) Five years experience of teaching or research including atleast three years as lecturer or in an equivalent position:

Provided that the requirement contained in sub-clause (ii) may be relaxed in the case of a candidate who, in the opinion of the Selection Committee has outstanding research work to his credit.

For Lecturers

(i) **In the Faculty of Arts, Science & Commerce**

(a) a doctorate degree or research work of an equally high standard in a relevant subject; and

(b) consistently good academic record with first or high second class Master's degree, or an equivalent degree of a foreign University in a relevant subject.

(2) **In the Faculty of Education**

Either

(a) a doctorate degree in Education or research work of an equally high standard; and

(b) consistently good academic record with first or high second class Master's degree, or an equivalent degree of a foreign University in a relevant subject.

OR

(a) a doctorate degree in any University discipline or research work of an equally high standard; and

(b) consistently good academic record with an M.Ed. degree in Education (which may be acquired while in service) or an equivalent degree of a foreign University.

For Director : (Adult Continuing & Extension Education)

(a) First or Second Class Master's degree of an Indian University or an equivalent qualification of a foreign University in adult education/social sciences/social work.

(b) A research degree of the doctorate standard in any of the social, sciences, education, adult education or on the basis of review of published research carried out.

(c) About ten years experience in programme planning, administration and teaching.

(d) Persons with experience in community development projects with emphasis on adult/non-formal education will be preferred.

For Asstt. Directors (Adult Education +Continuing Education)

(a) Postgraduate Degree at-least in the Second Class in one of the Social Sciences/Social Work/Adult Education or an equivalent qualification of a foreign University. A person with a doctorate in any of these areas will be preferred.

(b) Experience of research, teaching and/or field work of at least two years experience of field work or extension work will be preferable and experience of teaching and research work will not be necessarily essential. These requirements of experience should not be more than two years.

For Project Officer (Population Education)

Master's degree in Population Education/Demography or Social Sciences with specialisation in demography with experience of Population Education and/or Family Planning Education.

Note

Director, Assistant Directors, Project Officer are non-vacation academic staff and will have the same status and academic privileges as are available for the corresponding teaching staff.

(3) If the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may relax any of the qualifications prescribed in sub clause (b) of clause (1), or sub clause(b) of clause (2), as the case may be.

(4) Where in cases referred to in clause (1) and (2) no candidate possessing doctorate degree or equivalent research work is available or is considered suitable, a person possessing a consistently good academic record (weightage being given to M. Phil or equivalent degree or research work of quality) may be appointed provided he has done research work for atleast two years or has practical experience in a research laboratory organisation, on the condition that he obtains a doctorate or gives evidence of research work of equivalent high standard within five years of his appointment, failing shich he shall not be able to earn future increments until he fulfils the requirements.

(5) **Explanation**

(a) Marks above the mid-point between the minimum percentage of marks fixed by the University for award of first and second division are said to be high second class marks;

(b) A candidate for lectureship in the faculty of education, having obtained either an average of 55 percent marks in the two examinations prior to Master's degree, that is to say Intermediate and Bachelor's degree examinations, as also in the examination for B.Ed. (irrespective of the marks obtained in any of the three examinations) or 50 percent marks in each of the three examinations separately is said to have a consistently good academic record.

(c) A candidate for lecturership in the Faculty of Law having obtained higher an average of 55 percent marks in the two examinations that is to say examinations for LL.B. and examination for any other bachelor degree (irrespective of the marks obtained in any of the two examinations), or 50 percent marks in each of the two examinations separately, is said to have a consistently good academic record.

(d) A candidate (other than a candidate for lecturership in the faculties of Education & Law) having obtained either an average of 55 percent marks in the two examinations prior to Master's degree that is to say Intermediate and Bachelor degree examinations (irrespective of the marks obtained in any of the two examinations), or 50 percent marks in each of the two examinations separately, is said to have consistently good academic record.

Other Conditions for Permanent Posts only

(a) The period of probation shall be one year.

(b) The incumbent, shall get the benefit of general provident fund (G.P.F./Pension) as per rules.

(c) The age of superannuation shall be as per rules.

Applications on the prescribed form (8 copies) available from the office of the Registrar on payment of Rs. 5/- for the post of Professor/Reader/Director/Asstt. Director/Project Officer and Rs. 2/- for the post of lecturer as registration fee in cash or by Postal Order drawn in favour of the Registrar, University of Gorakhpur are invited so as to reach this office through the employer, if employed, not later than **March 15, 1985** for the above mentioned posts in the faculties of Arts, Science, Commerce, Education and Law.

The candidates shall be required to appear for interview if called, at their own expense. The Selection Committee may recommend higher initial salary to a person specially qualified for the above posts. It will be open to the University not to fill-up any post advertised.

Canvassing in any form by or on behalf of the candidate will disqualify him.

B.S. Gupta
REGISTRAR

ANNA UNIVERSITY

MADRAS-600025

Advertisement No. 3147/L3/85

Dated : 25-2-85

Applications in the prescribed form are invited for the following posts in this University. Application form, details of qualification prescribed and other particulars can be had from the Registrar, Anna University, Madras-25 on application accompanied by a crossed Indian Postal Order for Rs. 5/- (Rupees five only) dated not earlier than 25-2-85 drawn in favour of the Registrar together with a stamped self addressed envelope (Rs. 1.50) of size 22× 10 cms.

1. **Professor** (1)
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   Scale of Pay : Rs. 1500-60-1800-100-2000-125/2-2500.
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   Scale of Pay : Rs. 700-40-1100-50-1300.

In addition to pay D.A., H.R.A. and C.C.A. are admissible at the rates in force from time to time.

Request for application form, details of qualifications, field of specialisation prescribed and other particulars will be entertained upto 25-3-85.

Last date for receipt of completed application is **30-3-85**.

REGISTRAR

UNIVERSITY OF KERALA

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NOTIFICATION

In modification of University Notifications No. P.R. 1035/18/84 dated 1-8-84 and No. P.R. 1035/21/84 dated 22-9-84 the following provision is also incorporated in the qualifications prescribed for the posts of Professor, Readers and Lecturers in the Department of Aquatic Biology and Fisheries.

"Provided that the basic Master's Degree prescribed for the posts of Professor, Readers and Lecturers may either be in the concerned subject or in Zoology or in Marine Biology."

The last date for receipt of applications for the posts is extended upto **15-3-85.**

Candidates who have already applied in response to the earlier notifications need not apply again.

S.K. Rajagopal
REGISTRAR

INDIAN INSTITUTE OF TECHNOLOGY

BOMBAY

P.O. I.I.T., POWAI, BOMBAY-400 076

ADVERTISEMENT No. B-50/85

Applications are invited for the following permanent posts at this Institute, in the prescribed form obtainable free of charge from the Registrar, Indian Institute of Technology, P.O. I.I.T., Bombay-400 076 on request accompanied by self-addressed envelope (25 cm x 10 cm). Persons employed in Government Semi-Government Organisations or Educational Institutions must apply through proper channel. The posts carry allowances such as D.A., C.C.A., H.R.A. as per rules of the Institute which at present correspond to those admissible to the Central Government Employees Stationed at Bombay. Completed applications should reach the Registrar, I.I.T., Powai, Bombay-400 076 on or before **30th March, 1985.**

Candidates who applied in response to Advt. No. A-142/83 for the post of Assistant Librarian need not apply again.

Preference will be given to the candidates belonging to the SC/ST communities.

1. **DEVELOPMENT ENGINEER** : Scale of Pay : Rs. 1100-50-1600.
2. **ASSISTANT LIBRARIAN** : Scale of Pay : Rs. 700-40-1100-50-1600.

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QUALIFICATIONS & EXPERIENCE

1. DEVELOPMENT ENGINEER

   INDUSTRIAL DESIGN CENTRE (one post) Degree in Mechanical/Electrical Engineering or equivalent with 10 years experience in medium sized workshop out of which at least 5 years should have been in R&D or product development, thorough knowledge of various materials and processes and costing. Experience in developing prototypes from design stage to final stage essential. Should be capable of giving materials and processes specifications.

   Job Description

   He will be leading a team of technical personnel and will be responsible for developing prototypes. Experience relaxable in the case of candidate of proven ability.

2. **ASSISTANT LIBRARIAN : CENTRAL LIBRARY** (one post)
   (i) Good academic record with atleast a high second class Master's degree in a subject other than Library Science;
   (ii) Master's degree in Library Science with first or high second class.

   At least 7 years experience in a responsible capacity in a University level library. Should be well-conversant with various activities of an Academic Library such as procurement and processing of books & periodicals, Circulation Systems and providing assistance to readers, supervision of special collections, maintenance of Library materials and reprography and binding units etc. and providing assistance in general Library administration. Experience & knowledge of modern information handling tools will be an added qualification.

   Selected candidates will have to attend shift duties.

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University News

MARCH 16, 1985

Re. 1.00

- **Conference of Vice-Chancellors in the Asian and the Pacific Region**
- **Distance Teaching**
- **Anatomy of the Crisis in Education**
- **Training in Instructional Technology**
- **All India Persian Teachers Conference**
- **UGC Junior Research Fellowship Test**

CLASSIFIED ADVERTISEMENTS

INDIAN INSTITUTE OF TECHNOLOGY, BOMBAY

P.O. I.I.T., POWAI, BOMBAY-400076

Advertisement No. B-44 85

Applications are invited for permanent posts of Assistant Professors in the following areas in the Department of Electrical Engineering of this Institute, in the prescribed form obtainable, free of charge from the Registrar, Indian Institute of Technology, P.O. IIT, Powai, Bombay-400076 on request accompanied by self-addressed envelope (25cm×10cm). Applicants should give an account of their academic and professional record and list of research publications. Persons employed in Government/Semi-government organisations or Educational Institutions should apply through proper channel. Indian candidates abroad may apply on plain paper in duplicate. The posts carry allowances such as D.A.,C.C.A., H.R.A. as per rules of the Institute which at present correspond to those admissible to Central Government employees stationed at Bombay. Depending on qualifications and experience, a higher starting salary may be offered. Complete applications should reach the Registrar, I.I.T. Bombay, Powai, Bombay-400076 on **or before 15th April 1985.**

The Institute has a modern Computer, a very well equipped Library, a Central Workshop and excellent facilities for experimental research work through Centres such as Advanced Centre for Research in Electronics, Centre of Studies in Resources Engineering, Regional Sophisticated Instrumentation Centre etc.

There are 10 vacancies and most of these are proposed to be filled by recruiting applicants from outside the Institute.

Scale of Pay : Rs. 1200-50-1300-60-1900.

Total emoluments on the minimum of the scale excluding H.R.A.: Rs. 2615/-

Areas of Specialisation

(a) **Control and Instrumentation**

Electronic Instrumentation, Biomedical Instrumentation, Measurements, Transducers.

(b) **Communications**

Electromagnetic Waves, Antennas, Microwaves, Communication Systems, Integrated Line Communication, Optical Communication.

(c) **Integrated Circuit Engineering**

Design and Modelling of ICs, Compound Semiconductor Technology, Thin Film Technology, Opto Electronics, Photovoltaics.

(d) **Power Apparatus and Systems**

Power System Analysis, Power System Dynamics and Control, Power System Protection, Power System Transients, HVDC Transmission, Switchgear.

(e) **Electric Machines and Drives**

Machines and Drives, Thyristor Circuits, etc.

(f) **Microprocessors and their Applications**

Qualifications & Experience

I. **For Areas (a) to (e)**

Applicants should have a consistently excellent academic record with Doctorate/Master's degree in the appropriate field from recognised Institution/University. About 5 years experience in teaching and/or research and development is desirable. Candidates not possessing a Ph.D. degree may also be considered if they have to their credit equivalent published research work or design/development work of high standard either in an Institution or in an Industry.

Candidates with more experience either in teaching or research may be considered for the post of Associate Professor.

If a candidate is not found suitable for the post of Asisstant Professor, he may be considered for the post of Lecturer at the discretion of the Selection Committee. Bright young candidates who may be on the verge of completing their Ph.D. theses can also apply.

II. **For Area (f)**

A good Master's degree in Electronics/Communication / Instrumentation Engineering or in Computer Science, Engineering, with a minimum experience of 2 years in teaching/working in minicomputer or microcomputer applications to control, Communications and Instrumentation. Candidates must be well versed in digital hardware and computer systems. A Ph.D. degree in such areas will be an added advantage.

UNIVERSITY GRANTS COMMISSION

An announcement for Training Programme in the use of Computers in Science and Technology Education

A training programme for using Computers in Teaching and Learning at University level will be held at the Indian Institute of Technology, Powai, Bombay during 27th May-15th June, 1985. The training course will consist of Computer Assisted Learning, Computer Based Training, Computer Managed Instructions, Interactive Computer Graphics, CAI authoring languages: Logo, PLOTO, CAI strategies, Testing and Evaluation, Development of Software for Computer Assisted Learning in Physics, Chemistry, Biology and Mathematics; etc. etc.

Qualifications for admission in the course are :

"Those who have evinced interest in this activity and promise to continue making software, have already learnt one of the Computer languages such as Fortran or Basic"

Physics, Chemistry, Biology and Mathematics are the subjects to be covered in the first programme. Heads of these departments in the Universities should forward three names of participants from each department who fulfil the above mentioned qualifications and he should also guarantee that the trained participants will be encouraged and given facilities to develop software in their spare time.

The Director of the Training Programme is Prof. J.R. Isaac, Computer Centre, Indian Institute of Technology, Powai, Bombay. Comprehensive information about the training and an application form may be obtained from him as early as possible. The last date for receipt of applications by the Director of the course at Bombay is **10th April,, 1985**.

PROJECT OFFICER

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Editor :
M. S. RAMAMURTHY

COVAP

A Conference of Vice Chancellors in the Asian and the Pacific Region is being held at New Delhi from March 18 to 21, 1985. The Conference has been convened by the University Grants Commission and is the first of its kind in this region. Some aspects of higher education which will be discussed in the Conference are : (a) Problems of higher education; (b) Academic standards, curricula, teaching methods/materials; (c) Student discipline and management of institutions; (d) Extra-mural courses; (e) Equivalence and recognition of degrees; and (f) Mutual cooperation (i) in exchange of students and teachers, (ii) fellowships and endowments and (iii) cooperative research programmes. These aspects of higher education have a wide sweep and offer scope for fruitful discussion and identification of areas for cooperation.

All Vice Chancellors from Indian Universities have been invited to attend the Conference. Indications are that about thirty Vice Chancellors from the Region, besides the Vice Chancellors from India, are likely to attend.

The importance of a conference of this type cannot be denied. In view of the knowledge explosion, increasing mobility of students and escalating costs of education, cooperation within the region has become important. Recognition of degrees and qualifications, the element of adjustment needed on the part of students transported from one cultural milieu to another, and the like are live problems coming in the way of increasing mobility.

In view of the escalating costs of education in the advanced countries in the west it is no longer in the realm of reality, except for a privileged few, to even think of getting education from institutions in those countries. The developing countries, which are numerous within the Asian and the Pacific region, therefore have a strong case for collaboration amongst themselves. Already, it is not uncommon to see a large number of students from this region studying in institutions of higher education in India. Over the years the number of foreign students studying in India has increased considerably. This process has to be helped to grow for developing a better understanding amongst the people of this region.

Further, research in various sophisticated areas has become an expensive proposition and beyond the reach of many small developing countries. To be denied the fruits of such research would amount to condemning them permanently to a stage of underdevelopment. For these countries to march ahead therefore the only way out seems to be through a pooling of resources, both men and material, and through avoiding of duplicating the work already done elsewhere.

In a world bedevilled by not merely economic disparities but also by cultural chauvinism and a lack of appreciation of the strengths of a value system other than one's own there always lurks the danger of man setting himself against another man. Bigotry and intolerance can only lead to destruction. And this destruction, given today's sophisticated weaponry, can only lead to annihilation of the cultures built up over centuries. Peace on earth is therefore a vital need for the human race even to survive. If the individual's mind, "where wars begin", is to be rid of thoughts which are likely to destroy and instead imbued with thoughts of a constructive kind, "Cooperation" is the *mantra*. Regional cooperation will only strengthen international cooperation and understanding. And, the region of Asia and the Pacific has over 3,000 million inhabitants constituting 63% of the world's total population.

Science and technology know no artificial geographical barriers. Structural devices to strengthen cooperation are needed in the modern world. This conference will no doubt go into all these and other related matters in depth.

University News wishes the Conference every success.

14.3.1985 —Editor

DISTANCE TEACHING

Mrs. Vatsala Vedantam

Having examined in my last article the Open University programme of Britain, which I understand has served as a model for the one at the Gangotri Complex, Mysore, let us take a look at the latter, since it is the first of its kind to be started in South India. Fairly well-established (the Institute of Correspondence Courses and Continuing Education was set up in 1969), successful and popular, the only Open University in our State should in turn serve as a model for other States and Union Territories wishing to set up similar institutions. Now that the Centre has also given a green signal in this direction, the scheme should be accelerated and expanded throughout the country, to provide "education for all."

Till now, this ideal had been a mere slogan. With 1980 fast approaching, the slogan was beginning to sound alarmingly futile. It's good we have at last taken stock of the situation and made new decisions which could have far-reaching effects, which must, of necessity, be simultaneously applied, if they are to succeed.

One of them is the establishment of Open Universities. Another is de-linking jobs from degrees. Even though the Government has spelt out these two programmes separately, I am convinced after visiting and examining the Open University scheme at Mysore University recently that they must go hand in hand, for reasons I shall explain later.

Describing the origin and growth of this unique programme, Prof. K.S. Hegde, Vice-Chancellor of Mysore University, said that he had seen Britain's Open University system which was most impressive, and which had been incorporated partially in our own State. But for several reasons it was not possible to make it as broad-based. For example, Prof. Hegde said they taught a variety of subjects there which had high utility value for the students such as cooking, sewing, baking or electrical wiring and plumbing. In other words, Britain has made use of her Open University to teach vocational skills, rather than higher learning alone.

But all this calls for immense productional activity. There must be people — specialists in every vocation as well as media involvement, to produce such educational programmes. As we have seen earlier, the BBC/OU Production is totally dedicated to these programmes of long distance teaching. I am sure Manasa Gangotri or any other University could also establish similar educational programmes, if All India Radio and Doordarshan devoted more time and effort towards education rather than entertainment.

As Mr. Anthony Thompson, a reputed library expert from Wales whom I met the other day when he was visiting this city, said "in a developing country like yours, every opportunity must be seized to promote education. People can always buy entertainment but the Government should use its media to give them education." How true! With such powerful media like television and radio, we should make full use of them as BBC does and link their programmes with those of Open Universities. Only then will all those who, for one reason or the other cannot attend educational institutions —students who had to discontinue studies for financial reasons, or drop out due to lack of academic aptitude, or those who could not get admitted to institutions because of adademic drawbacks — have their educational needs satisfied.

Again, the Open University is ideally suited for employed adults who cannot attend full-time colleges. Or those who wish to study for its own sake.

Talking to some of the students of the Mysore Open University exposed interesting sidelights. While graduates like Mary George and Lizzy George, both school teachers from Kerala wanted a Master's Degree which would fetch them University careers, there were SSLC students, like Udaya Kumari (at present a nurse in the ESI) who hopes that, by qualifying for a degree in Political Science, she could become a politician an MLC or a Minister some day! The Open University at Mysore caters to all aspiring students on one condition only. According to the Vice-Chancellor a minimum age requirement has been specified (25 years for B.A., 35 years for M.A.) to make sure of a certain maturity. This has enabled many to take up studies after several years break. Like Wg Cdr. V. Roy of Secunderabad who despite a physical handicap, has become a student of English Literature after 24 years! He had passed his intermediate in Science from Calcutta in 1969, and yet finds no difficulty with the M.A. syllabus, as he always been a voracious reader and likes English.

Similarly Father V.V. Thomas, a Diocesan parish priest from Alwaye, whom I met during a contact programme, did his Matriculation many years ago. He is now in the M.A. class, just for the love of Shakespeare. Others like Ms. Saldanha from Mangalore hope to find a job with an M.A. degree in hand, while Mr. C. Ramalingu, a Headmaster from the Rural High School Mandya, needs an M.A. degree "to assume full charge" of his post.

In the case of Dharmsingh B.V. Hazare, the reasons for study are different. This 53-year-old Superintendent in the Hubli Corporation feels that a degree will remove official hurdles and pave the way for a promotion. Fiftyeight-year-old Motilal, an active businessman has opted for MA in Political Science 33 years after his Matric so that he can take to law afterwards!

The case of Ms. L. Shambu, widow of a journalist, is unique. A highly motivated student in her sixties, she simply likes "to get more and more educated" B.A. in 1948, M.S.W. in 1958, M.Ed in 1974, M,A. Sociology in 1978, M.A. (Hindi) in 1984, and now M.A. (English) in 1985! "It takes my mind off personal sorrow", says this courageous lady, who lost a son just before she plunged into studies once again.

The most enterprising of all however is 74-year-old Sumithra, a freedom fighter from Bellary, who does not feel too aged to study!

According to some of the teachers I met, teaching these students is more rewarding, as they are responsive, responsible and serious about their studies. They categorically stated that given the choice, they preferred teaching "adult-students" to the regular ones, who were prone to indiscipline. In fact, this seems the greatest problem faced by the authorities. According to Mr. J.S. Parashiva Murthy, Director of the ICCEC, the biggest stumbling block to the Open Varsity is the unreasonable attitude of the regular college students (backed by some teachers) who resent degrees being awarded to people with no academic background. They feel it would hurt their own employment opportunities.

But their fears are not justified, says Mr. Parashiva Murthy, since the Open University students study the same syllabus and take the same examination, with the same norms of valuation, to maintain the same academic standards. If, inspite of their meagre educational qualifications, these adult students do better sometimes and pass with more distinctions, it is because they are better motivated, he feels.

The Open University students themselves feel that certain reforms are called for, like eliminating portions of study after periodic exams, and not being made to repeat the papers where they have passed. Since they have many other pre-occupations (unlike the regular students) a semester scheme would suit them better. They also feel that assignment papers could be returned to them after correction, so that malpractices could be avoided, and they can also improve their work by knowing their mistakes.

The Open University instructs by Correspondence and Contact programmes. The latter is arranged once a year, when students attend seminars and guest lectures at the Gangotri complex. For the rest, the "Master Lessons" are mailed to them periodically in units. They are also given assignments for "internal assessment," and are allotted marks on the basis of their performance in seminars, tests and such assignments.

1985

It is a marvellous concept, which should work well if properly implemented, like the one in Mysore University. By streamlining the scheme a little, the authorities could overcome some of the problems, like raising the age requirement to 35 years in all cases, thus preventing a glut in the job market. This should also alleviate the apprehensions of the regular students, who will not then be denied employment opportunities.

This aspect however will be completely looked after if jobs are de-linked from degrees as recommended by educationists like Dr. Malcolm Adiseshaiah time and again. Even problems like copying and other examination malpractices (which can plague Open Universities too) could be altogether eliminated once these degrees become superfluous. It would also reduce people rushing in just to acquire a paper-qualification, for the sake of a promotion or other recognition.

The Mysore University could develop two kinds of programmes then — one in the area of higher learning (where the age-limit is raised leading to academic qualifications, and the other in general education (open to all) where no degrees or certificates are issued.

Short-term courses teaching various skills that could lead to self-employment would be more productive also. Genuinely interested students alone would join such courses. It is to such students — housewives who don't have opportunities for prolonged study, employed adults who would like to enlarge their horizons, young people who could learn new skills — that an Open University should cater. If it merely becomes the happy hunting ground of "degree seekers," it will only swell the ranks of the educated unemployed who are mass produced in regular colleges, anyway. An Open University should aim at achieving something more. It should become the channel of universal education. Perhaps Mysore University, which has the necessary infrastructure, could achieve that once degrees are made superfluous for employment. □

[*Courtesy* : The Deccan Herald]

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Anatomy of the Crisis in Education

U. L. Kude*

Education is supposed to bring out the best in man. Marathwada has a mushroom growth of educational centres in seventies of this century. The education, as an agency for the value-transmission can play an important role in shaping attitudes about the unwritten rules of the political game. The centres for higher studies should enable the students to transform the battle of interests into the battle of ideas. The Education Commission Report categorically says that "The destiny of India is being shaped in her class-rooms"? Though, Marathwada is not as restive as other parts of the country; many a times the destiny of Marathwada is shaped in streets with brickbats and home fires.

The occasional and localised student indiscipline, has not attracted the students. It does not mean that the students in Marathwada neither have any problems nor they are restless : (i) The recent socio-economic and political movements. (ii) Establishments of Agricultural University at Parbhani. (iii) The renaming of the Marathwada University. (iv) Creation of private engineering and medical colleges based on capitation fee etc. have made the students restless. These restless, affluent and politically motivated students on the one hand and multitudes of indifferent students on the other, are fighting either for the non-issues or for the benefits of the cunning and shrewd politicians.

Higher education is supposed to channelise the energies of the youth for restructuring the rotten socio-economic structure. But the youth is thrown to the winds. Neither the teachers nor the social reformers are in a mood to pay serious attention to the problem.

Naturally, the educated youth swings like a pendulum in between political eccentricity and passivity. These bewildered, frustrated and angry youth is the explosive material ready at the hands of the ever ready politicians.

Marathwada till today, is a bastion of Feudalism where socio-economic and political problems can be easily manifested into caste struggle i.e. the student community was vertically divided into Daleet and Non-daleet on the issue renaming the Marathwada University. Even the students from the Daleet Community were divided in numerous sub-castes, isolating totally the Mahar Community on that specific problem.

The Non-Daleet Students Action Committee gave a call for indefinite strike and bycott of the colleges. The colleges all over the Marathwada were closed down for a fortnight. The movement for renaming the Marathwada University was ultimately turned into anti-Daleet movement giving free hand to killings, looting, arson and hooliganism in rural areas.

For the detailed account of this movement, the readers can refer to the back issues of Marathwada a daily newspaper. Marathwada was deadly against this movement. Why did this happen? How did this happen? The rich peasantry which had captured the seat of power, exerts tremendous influence upon the various social classes. Specifically in rural area, the psychosis of fear forms a firm power based on which the entire edifice of the elite rests.

Thus our universities (and so also the Marathwada University) are busy in systems Maintenance. The centres for higher studies in Marathwada have given birth to the elitist and pyramidal type of systems, based on competition and coercion; power and profit for the affluent few, and exploitation for the multitudes. The minority of the successful men control the rest. The affluent few, being dominating politically, controlling social relations, acting as decision makers rule and run the system keeping others waiting outside. It is the coterie of the successful that holds the monopoly of the privileges and provides for a rule of violence. i.e. the emotions of the poverty stricken people in general and the unemployed youth in particular were flared up to develop and strengthen the development of Marathwada movement, in such a way to suit, serve and safeguard the interests of the affluent few; politics of backwardness was exploited for the politics of power, position and profit.

Thus the Higher Education is specially tailored to suit this system. It maintains it. It is decided who are to enter the ranks of the elite and who are to be in the back waters. The balance is overwhelmingly in favour of the rich and the privileged. The poorer students do not have the entry in the newly created Engineering and Medical colleges, based on capitation. It is not only the wealth that creates power, but the education does so too. It perpetuates the elitist, divisive, exploitative system. Education has thus been dysfunctional to social development. The centres of higher education, however, started collapsing when the device did not work and the youth failed to solve their problems. Violent protests (in different forms of course) took place on large scale against the violence of the establishment represented by the elite system of institution building. That undermined, finally, the very basis of the University. Universities are thus essentially meant for a society where only an elite would go for higher education.

The crisis in higher education is the result of the lack of any new direction to expansion in the context of national development. The Indian educational system today is being pulled in opposite directions by the pre-existing elitist based on one hand, and the emerging populist pressures on the other. The consequences of these contradictory pulls reflect is multi-dimensional i.e. social, economic, political etc.

V. V. John sarcastically remarks ......

"The authorities should be thankful that the youth do not go beyond demanding minor changes

(*Continued on page* 7)

**S.R.T. College, Ambajogai.*

Discipline of Political Science in India

Smt. G. Banerjee*

Political science as it was taught in Indian Universities was mostly British in orientation. The syllabus comprised of a history of Western political thought, a study of 19th century 'isms' and acquitance of a few leading constitutions a perusal of the history of 'International Relations' and an elementary knowledge of the principles of public administration. This was where political science stood at the end of the II World War in the Indian universities. It was only civics at lower levels teaching was confined to repeating ad-nauseam. What was written in a few text books by the British authors. It was hallmark of modernity to refer to a grammar of politics by H.J. Laski. From the beginning of modern political science the text materials for the introductory course have been inadequate. The lack has not been a lack of trying. The lack was in the profession. Charles F. Andrain has declared his views: 'Very recently we had no satisfactory ways of looking at government and policies that were not parchial or partial or both we looked at constitutions and laws. We looked at structures and machinery. We looked at processes and procedures. We looked at rulers and ruled. But weren't able to put together all these ways of looking at government and politics.'

Political science appears to be a complex subject. For it is a diverse elements. This is because of the fact that the subject Political science is less static and more dynamic. It is an ever moving and developing science without any fixed scope and limitations like other subjects of science e.g., Physics, Chemistry, Mathematics etc.

In Political science there is enough scope of interpretations. Various authors and thinkers have expressed their views on various aspects of political science from different angles.

A teacher entering into the class room for teaching the Political science does not know exactly what he means to the students also do not feel satisfied that they have learned and attained particular aspects.

Right from the period of Plato (427-347 B.C.) and Aristotle (384-322 B.C.) various definitions and discipline of Political science have come down the ages. In those days political science was merely regarded as a study of a state and Aristotle considered man as a social animal. In fact till the beginning of the present century, political science was identified with the study of the state and government only. But with the progress of civilization and increase in state and governmental activities, the scope of political science was widened to such an extent that it has become difficult for its authors to give any specific definitions, principles and disciplines of Political science. Human nature, human activities, human consciousness and psychology coupled with increasing state activities making the present state a welfare state along with ever expanding international law and developing international institutions, specification of the different aspects of political science has rather became difficult. Thus, a correct study of the discipline of Political Science still remains a challenge to its authors.

Before World War II, most of the political scientists identified politics with the study of the state. Moreover, a widely used text book revealed the idea of the 'Introduction to Political science' opened with assertion 'political science begins and ends with the state'. But today a very few political scientists are ready to accept the said idea because the idea of politics is existing in every sphere of all societies. Therefore, modern political science needs a concept of politics which can be applicable in all political situations in all places at all times.

Hence, in the Post-Second World War period the new winds started blowing from the US University scholars mostly from the Chicago School of Social Science. The traditional political science still lived and resounded in the lecture-rooms of political science but the new winds from across the Atlantic are shaking the foundations of traditional political science.

Researches in political science were confined to village Panchayats and Municipalities and which were most descriptive or historical in orientation. It may be relevant to raise such questions that 'Is research in political science progressing along desired lines? and adequate in terms and quantity as well as quality?

Only a few years back there was a circular circulated amongst Universities to modernise the syllabus of social sciences in general and political science in particular by the U.G.C. By way of response the National Movement for Freedom came to be included in political science syllabus for the Post-Graduate examinations. 'India is a multilingual, multiracial and multi-religious country. National integration and emotional involvement are very much necessary for meaningful participation in the political process. Provincialism, regionalism and casteism had been our enemies. Our Philosophers and leaders have been advocating unity and homogeneity. They can be held together if there is a sense of mission and sense of purpose. Revival of nationalism and feeling of democracy can go a long way in this direction'.

Certain vital areas investigation has started in India. It is concentrated mainly on the problems of development of its change. Particularly interaction between socio-economic base and political structure. It's participation and mobilisation and socio-economic change. The cult of party system and its electoral politics.

Still later, the behavioural and empirical approaches came to be studied. Their importance came

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**Lecturer, K.B. Women's College,*
Hazaribagh, Bihar.

to be emphasised in class rooms but the application of the scientific methods to research was few and far between. The political structure of modern society is changing constantly, 'the structure is of Indian administration was said to be steel frame work since there was no scope for popular participation though the beginnings of democracy had been made in 1919 by the introduction of diachry in India'.

India's constitutional system establishes political democracy but it does not encourage democratic centralization. Lord Bryce had compared 'Indian Administration to Plato's philosopher King, 'shortly it can be said that Indian democratic decentralisation is neither democratic nor de-centralised as evidenced from the Constitution of the local bodies. Democracy needs intensity but in India democracy reveals the tendency of contraction. The elected representatives do not possess the qualities of comprehensiveness. As regards the decentralisation, central control supervision and direction are noted.

The rigorous application of methods to the conduct of research was rare. The library still continued to be the laboratory of political science in the Indian Universities. Field work and observation were missing.

Moreover, researches on International Relations and Foreign Policy or on Indian Constitution or on Developmental Administration were not academically purposive so much as utilitarian i.e., Ph.D. Degree earners. In short, the sphere of political science draws from the past experiences both indigenous and exogenous in order to collect and compare the processes and system of the present. The said views can be compared with the research result of a project. A survey of research in political science, 'Polity like society is always mosaic of the heritage of the past, the challenges and passions of the present and the perception and projected alternatives of the future.'

Research has to be conducted in the grass-root of our rural social economic and political problem. If India was a land of villages numbering five lakhs political study would not be complete and meaningful unless the man, the moment and the milieu were taken into account.

Election studies were mostly urban oriented political behaviour appeared to be trickish to urban scholars because they has not cared to be in touch with the villages and village people.

Political science as it was taught in our educational institutions had an imprint of the 19th century European learning. After Independence the entire discipline appeared to be rootless. It was not based on Terra-Firma.

The syllabus of Political science in a famous University of Eastern India has been changed but on an ideological basis.

Political science as a discipline in India is on the theories of a slow change. Many of the Western concepts were sounding hollow. That was the reason why most of the books on Indian Constitution written in the first few decades were out of date now. Political theory and the theories of administration also appeared to be woefully inadequate, if not altogether irrelevant.

The following changes should be made in the syllabus for higher studies, if political science as a discipline was not to be confined to the philosophical, legal and historical study only. A Commission of Political scientists should be appointed by the U.G.C. to make political science as a realistic discipline. It should also be made socially relevant and meaningful study.

Political science in India was overbulging with all kinds of study. Some of the subjects such as International Relations and Public Administration should be declared as independent disciplines. Political science should be pruned to become a suitable tool of analysis and explanation of political phenomenon.

Political science in India was still an architectonic science in style, size and design. It was essentially Aristotlean. Traditional Indian knowledge, empirical knowledge studies and the modern methods and techniques must be adopted. The problem was urgent because more students studied political science in India than in any other country. May be, we were next to the USA in this field.

Political science as a discipline should be Indianised. There was no use blindly following others who did not take Indian conditions into account. Change in one more aspect was necessary. There were lots of researches carried on by the individual scholars in political science who agreed on fundamentals. But there were no collective co-operative researches. In short, it should be in fitness of things, if the discipline of political science in India, was given a new orientation, pari-passu with the changes in the social economic and political realities in our country and in the outside world. □

ANATOMY OF THE CRISIS IN EDUCATION (*Continued from page* 5)

in the rotten curricula and other hand if the youth challenges the existing curricula, demands good libraries & laboratories, improvement in teachers academic standards, adequate hostel facilities etc. The policy of appeasement will not work."

The haphazard growth of educational institutions has directly resulted in the increase of unemployment in almost all disciplines. It is necessary to have of realistic assumptions of our manpower projections. It is the prime need of the time to conserve our resources and use them in planned manner to achieve optimal results. Any dissipation of our resources would be harmful to the country's development prospects.

Apart from the remedies suggested by various educational commissions; we will first of all have to redefine the purpose of education. The purpose of education must be to make able the students to think. To make him self-reliant. Therefore, the education must give up it's craze of degrees and targets. Neither it should be the goal of education to help its recipients to win in the rat race and to achieve affluence, nor it need help the elite to establish its monopolies. The education must be society-oriented and should create in turn a society non-elitist in mode, non-violent in form & functions. Then only we will be able to minimise the crisis in our educational system. □

International Centre for Science & Technology Education

An International Centre for Science and Technology Education is being set up in India. Whereas it will take some time to establish the Centre, it has been decided to start academic programmes even before its formal establishment. Consequently, we have initiated some programmes such as preparation of Video lessons in Science and Technology subjects at University level, workshops to prepare software in Computer Assisted Learning.

An International seminar on Research in Science and Technology Education at **University level** will be held for five days during June 24-28, 1985 in the Himachal Pradesh University, Simla.

Following themes have been identified for the seminar :

1. Adult Psychology and Science and Technology Education.
2. Curriculum development including methodology of teaching/learning, evaluation of programmes and projects (effectiveness/impact/utilisation) and evaluation of Laboratory Work.
3. Research productivity.
4. Creativity in Science and Technology Education.
5. Distance education—studies of programmes implemented by open universities, other aspects.

There will be no registration fee for the seminar. Travel expenses under the U.G.C. rules will be reimbursed and accommodation and meals will be free of cost to participants whose papers are accepted for presentation.

Please send us an abstract of your paper by 15 April, 1985 and full paper by 15 May, 1985, at the address given below.

Other necessary information about the Seminar will be sent after hearing from you.

Prof. V.N. Wanchoo
Room No. 121
University Grants Commission
Bahadur Shah Zafar Marg
New Delhi-110 002.

Shri Kumaramanglam Addresses Convocation of Indian School of Mines

Excerpts from the Convocation Address delivered by Shri J.G. Kumaramanglam former Chairman, Executive Board, ISM at the Indian School of Mines, Dhanbad on February 22, 1985.

Convocation

"... As one of those who were associated with the Coal Industry for 10-15 years and as one intimately involved in the nationalisation of the coal industry, I would reiterate that the Government had no alternative but to nationalise the industry, which till the early seventies was largely in the hands of the private sector with a contribution of less than 20% from Government-owned companies, namely, NCDC and SCCL. Moreover, in the majority of these mines, the private owners managed these mines in a haphazard, unscientific and wasteful manner, and did not respond to the suggestions from the Government for amalgamation of the collieries particularly the smaller ones, to save coal locked up in barriers between the properties. Many mines were also abandoned due to difficult mining conditions, which made them unprofitable, though good quality coal could well be mined from such mines.

There was a tendency also to adopt wasteful mining practices, generally termed "slaughter mining", with an eye on profit. Some of these mines, which were abandoned by the private sector, have since been re-opened and very substantial production is being obtained from them, viz., Dhemo-Main in the Ranigunge field, which is presently giving substantial production, and where a large scale mechanised coal handling plant is under erection. Furthermore, no efforts were made to fight the many fires in the Dhanbad-Jharia region, because of which quantity of coking coal of good quality remains locked up, or might have been lost for ever, I am advised that over hundred million tonnes are lying locked up under Jharia town. Moreover Jharia town is surrounded by active fires which may well one day engulf the town itself, but more important is the locked up good quality coking coal of which the country will be desperately short in the not too distant future. Politically it will be necessary to take a decision to shift Jharia town to one of the satellite towns and undertake mining of this coal at an early date as otherwise Jharia town will be destroyed by five as also the coking coal below.

As a result of nationalisation, in the period 1971-73 to 1984-85, there has been a very substantial increase in coal production as is evident from the fact that the All India coal production has increased from 78 million tonnes in 1974 to 147 million tonnes in 1984, i.e. an almost 100% increase in a period of 10 years, or an average of little less than 10% per year. In the same period, 212 coal projects worth Rs. 4769 crores have been sanctioned for implementation, and as many as 13 projects are in various stages of completion. Further projects will be implemented, and more are in the pipeline. Moreover, to speed up the implementation of these projects and avoid slippages that have been taking place, a number of measures have been initiated that should hasten the progress of implementation within a specified time-frame and thereby avoid unnecessary cost escalation which inevitably results if there is a delay in implementation.

Coal production is envisaged to increase from 147.4 million tonnes in 1984-85 to about 240 million tonnes by 1989-90, registering an average annual growth of 9.67% against the total demand in the terminal year of VII Plan assessed as 237.4 million tonnes. In the VI Plan itself the total investment in the Coal Sector has been Rs. 3,313 crores in CIL and Rs. 243 crores in SCCL. In the VII Plan, investment is expected to be of the order of Rs. 10,000 crores for CIL and Rs. 775 for SCCL.

It is my firm belief that this scale of investment would not have been possible, had the Industry remained in the private sector and the mines were managed in the manner adopted prior to nationalisation. In fact, the increase in coal production which has been very substantial, would not have been possible without nationalisation. At the same time, if one has to be honest, it has to be admitted that the nationalised coal mines have not performed fully to our expectations mainly because of various handicaps, much of which was a heritage from the days of the private sector management. As for example, the so called 'mafia' in the Dhanbad-Jharia region, and the condition of some of the mines at the time of take-over. It is interesting to note in this context that in two of the subsidiary companies of CIL, namely, WCL & CCL, production has increased very substantially, and both these companies are now operating on a profitable basis. This is perhaps on account of the fact that in both these companies, new mines were developed prior to nationalisation by NCDC, which has substantially contributed to production after nationalisation, and a number of new mines have been projected and implemented there the basis of technology developed by the NCDC and now utilised by the CEMPDIL, a subsidiary of CIL. Perhaps, mining conditions were also easier, particularly in WCL areas where most of the private sector mines were in the organised sector. In CCL, much of the contribution has come from mines developed by NCDC prior to nationalisation, besides restoration and construction of some mines and development of new ones. On the other hand, BCCL and ECL continue to operate at a loss, and their increase in production has not been very substantial. In fact, at the time of takeover, ECL and BCCL raised more coal annually than CCL or WCL, whereas today the highest annual production is by WCL followed by CCL, whilst the increase in annual production by ECL and BCCL is relatively and substantially less.

No doubt, WCL and CCL have the advantage of large scale opencast operations, and I am advised that opencast production in CCL is approx 65 to 70% of their total production, whilst in WCL, it is between 30 and 35%. Also, as mentioned above, mining conditions in WCL, except in Pench Valley, Kamptee and Chanda Valley, are perhaps somewhat easier. As against this, at the time of takeover, there were no opencast mines either in BCCL or in ECL, except for some ones; the bulk of the production had to come from underground mines, which were generally in bad shape due to wrong practices adopted by the private owners with an eye on profit rather than on conservation and tackling different difficult conditions that might arise.

This is no way a reflection on the management of the concerned subsidiary companies, namely BCCL & ECL, but serves as an indication of the difficulties that these managements have had to face at the time of nationalisation. All mines in ECL and BCCL, other than Sudamdih and Moonidih, were in the hands of small owners as against a substantial number of mines in the public sector which were available to WCL and CCL at the time of takeover. In addition, WCL and CCL had the advantage of the philosophy and culture of management inherited from the public sector, as a large number of the supervisory and senior staff of the NCDC were deployed in these two companies, which was lacking in BCCL and ECL. The real test of nationalisation is in ECL and BCCL, the two oldest, deepest and much slaughtered coalfields in the country.

Another important aspect which has received attention after nationalisation is safety and conservation. Continuous efforts in regard to safety have been made to take preventive action to ensure that accidents are minimised. In 1976, three years after nationalisation, 244 persons lost their lives due to fatal accidents and 1,249 were seriously injured. In 1984, deaths due to accidents have been reduced to 128, and the number of seriously injured, to 709. In the light of this, rate of fatalities per million tonnes as well as serious injuries in 1984 stood at 0.99 and 5.52 respectively. The Committee on Safety in Coal Mines had incidentally recommended that the rate of fatalities and serious accidents per million tonnes output should be brought down to two by 1982 and 0.99 by 1992 in the case of fatalities, to 15 by 1980 and 12 by 1987 in the case of serious injuries. These norms have been achieved in 1984, but one cannot afford to be complacent, and therefore, efforts are necessary and steps have to be taken to make Indian mines in regard to safety not only comparable with best of the world but even better. To achieve these standards, I am advised that CIL companies are implementing the recommendations of the Committee on Safety in Coal Mines and various Conferences on Safety in Mines. In my view, moreover, it should be possible to achieve a zero fatality in opencast mines, and to limit the fatalities in underground mines, whose operations are hazardous by nature, if not to zero, at least to 0.5 per million tonnes. It is hoped that efforts in this direction would be made and those of you who are passing out to join the Mining Industry will not only contribute to achieve the production targets of the VII Plan and thereafter but also contribute in improving the technology of mining and reducing the hazards so as to minimise fatalities and ensure 100% safety record.

As regards conservation, according to the finding of the Energy Policy Committee for 1980, coal reserves of the non-coking variety should be adequate to take the country upto 2090 A.D. on the basis of an annual production level of 400 million tonnes to be achieved in the year 2000. As regards coking coal, it is presently estimated that on the basis of the expectated consumption, the reserve may last up to 2035 A.D. only. The importance of coal conservation cannot therefore be over-stressed, and we have to improve our technology of mining to ensure that the maximum quantity of coal in any mine that is developed, is extractable, and the methods adopted are such as to leave the minimum quantity of coal behind. CIL have, I understand, taken some steps in this respect not only to improve production, but also promote conservation of coal, viz., increasing the number of opencast mines to give substantially higher production without wastage of coal. Recourse has also been taken to introduce new mining technology in underground mines to yield greater percentage of coal recover, viz., by introduction of mechanised longwall mining besides other steps, namely beneficiation, oil agglomeration etc. The importance of conservation would be readily appreciated, as under the 'bord and pillar' practice in the private sector, as also to some extent in the public sector in the past, particularly in ECL and BCCL mines substantial quantities of coal were lying in pillars, estimated atleast 1000 million tonnes of different prime coking coal quantities of relatively low ash content. The technology of extraction of such coal has yet to be finalised, and this is a challenge which those of you now passing out of this School should take up and solve. Another difficult factor faced by the nationalised coal mines, particularly those in BCCL and ECL, is that many of them have thick and steeply dipping seams, which have been largely worked under the old system, and for which technology has to be developed to extract the remaining coal to the maximum extent possible with lowest percentage of non-recovery, for which solutions are yet to be found, ensuring maximum safety. In this context, I am given to understand that the Government of India have entered into foreign collaboration with several countries, viz., UK, USSR, Poland FRG, etc., who have developed sophisticated technology in underground mining to tackle such problems. These collaborations encompass transfer of technology in areas of modernisation of machineries, longwall mining, sub-level caving hydraulic mining, etc., besides collaboration in developing very large opencast mines. It is time however that we had a fresh look at the need for foreign collaboration in certain areas, as by now, we should have developed our own expertise, particularly in the field of opencast mining, as such mines having more than million tonnes of annual production had been developed by NCDC in the past without much foreign collaboration. Moreover, mere adoption of foreign technology without adapting it to the conditions as exist in this country, where the geological conditions are often different, could lead to wastage of investment. It is in this field where the I.S.M. faculty could play a bigger part with its infrastructure in mine system designing, centre of studies in Longwall (Coal mine), mechanisation, its research and development wing, its consultancy wing, etc. You students who are passing out should also contribute in this respect in the light of the training and education you have had in this School.

Another aspect of coal mining which deserves attention is that mere increase in the quantity produced without a corresponding increase in calorific value would be self-defeating. I am advised that during 1980-85, while the quantity of coal produced increased by 29.8%, the increase in terms of calorific value was only 19%. However, in the VII Plan period, it is being projected that whilst there will be an increase in production of 50%, the increase in terms of thermal value will be 57%. As per this Plan, the production of coking coal is expected to increase from 32 million tonnes in 1984-85 to 39 million tonnes in 1989-90. The production of non-coking coal of superior quality is also expected to increase from the present 70 million tonnes to 90 million tonnes, whilst the production of lower grade coals will increase from 28 million tonnes to 78 million tonnes.

There has been considerable criticism of the management of the nationalised coal industry, much of which I consider is misinformed, sometimes misconstrued and even mischievous. It may perhaps be that the steep increase in the price has given rise to this criticism as also alleged lack of attention to the quality of coal despatched, particularly to power stations and steel plants. Increase in the price of coal, in my opinion, was inevitable taking into account the increasing cost of inputs, inflationary tendencies in the country resulting in increased wages, V.D.A. etc., as provided in the wage agreements concluded every four years. These factors would have also been there, had the mines remained in the hands of the private sector. In this context, it may be noted that had the Industry remained in the private sector, mines which were unprofitable to work due to geological conditions with reference to the standard prices fixed by the Government for different grades of coal, would have remained unworked. In the public sector, however, such mines continue to be worked on the assumption that the losses which these mines will inevitably incur on account of difficult mining conditions, would be made good by the profits that can be earned from mines which are relatively easy mines, particularly, opencast mines. This, as I had already stated, is one of the reasons why WCL and CCL now show profits, whereas BCCL & ECL continue to show losses. It is not generally known that at the time of nationalisation, many private sector mines were not observing statutes, conventions and laws in regard to wage payments, PF contributions etc., particularly, in regard to V.D.A. Immediately after nationalisation, it was ensured that the payments were made as per statutes and conventions, and PF contributions were made according to law; and as a result there was immediate increase in cost of coal though there was no increase in wages, by over Rs. 3/- to Rs. 5/- per tonne merely to honour the statutes etc. No doubt any increase in coal prices has a reflection on the cost of steel, power and cement, and to a lesser extent in any industry where steel is the basic raw material. However, what seems to have been over-looked is that even if coal had remained in the private secor, much of the increase would have been inevitable in view of the higher cost of inputs and the increase in wages and salaries. Incidentally, cost of coal in India is still substantially lower than the average world price.

There have also been continuous complaints from major consumers viz., power houses, steel plants, etc. about quality of coal supplied by CIL, particularly in the shape of oversize coal, extraneous matter and supply of coal with lower calorific value than are acceptable to power houses and steel plants. These complaints should be gradually overcome with the introduction of joint sampling in the case of major consumers of coal, viz. steel plants, power houses, cement industry, etc., and the setting up of coal handling plants with arrangements for picking out extraneous matters, particularly, in the case of opencast mines etc. It is expected that by 1986-87, about 88% of the coal produced will be handled by these plants (CHPS) as against the existing 47%. The Hon'ble Minister for steel, Mines & Coal has recently warned the coal producing companies that they must pay attention to quality and appropriate action will be taken if there is failure on this account. I have no doubt that if joint sampling is properly implemented with a suitable Bonus-cum-Penalty clause, complaints on quality will substantially reduce. As an example, Bonus-cum-Penalty clause applicable to washed coal from CCL Washeries has improved the performance of these washeries in regard to coal supplied to Steel Plants from these washeries.

One cause for the dissatisfaction in the Coal Industry is the marginal increase that has taken place in the productivity of coal mines. The output per manshift was around 0.66 tonnes in 1979-80, it has increased to 0.87 in CCL and 0.70 in SCCL in 1983-84. Even this marginal increase is largely attributable to greater quantum of production from opencast mines, and to a limited extent on account of mechanisation in underground mines; and it should really give us no cause for satisfaction. Serious endeavours have therefore to be made, in association with the labour to improve productivity, to approach the developed countries' standards, say, an average OMS of 2 to 3 tonnes (overall).

The importance of the Coal Industry and the part it must play in the progress and welfare of the country cannot be overstressed. It is the primary source of energy, and steel and power houses have particularly to depend on it, whereas oil and gas can only play a second and supplementary role in this respect.

As I have already stated, with the standard method of pricing adopted for different grades and qualities of coal, it is difficult to judge the efficiency of mine management on purely the anvil of loss or profit. Certain mines, on account of geological conditions and other difficulties, may always make a loss with reference to the standard price for the particular grade of coal mined by them, while certain other mines may make substantial profits for the reason of easy mining conditions etc., particularly opencast mines. It is desirable therefore that a system of standard costing is introduced for every mine which would determine, taking into account the conditions of the mine, the net profit or net loss that a mine should make, if efficiently managed. It may well be that many mines or some of them which are making losses due to difficult conditions in mining or geological factors, are more efficiently managed that a profitable mine—to the extent that losses which are inevitable, have nevertheless been controlled, whereas even if profits are achieved in a profitable mine, perhaps better management would have given even higher profits. Introduction of standard costing in each colliery would enable a better evaluation of the performance of the mine and its management. It is time that CIL and SCCL introduce a system of standard costing in all mines as this will not only help to evaluate the performance of the mines and its management at different levels, but also assist in determining the standard prices on an overall average basis for different grades of coal . . .

In passing, I should mention that computerisation is already a ready tool of management in day-to-day operations and in projecting new mines, and promises to play a much more substantial role in mine planning and monitoring production, cost etc. It is desirable therefore that Mining graduates are familiarised with the system of computerisation, so that by the time they take up responsibilities in the industry, they will be conversant with the use of this tool in the coal mining industry. I am advised that a start has already been made in the ISM in this regard. Another aspect which deserves attention is that coal mining is now becoming more and more inter-disciplinary. No doubt, the qualified mining engineer carries a greater responsibility in view of the provisions of the Mines Act. Nevertheless, with greater emphasis on mechanisation both in opencast mines and underground mines, the Mechanical and Electrical engineers necessarily have to share much greater responsibility today than was the case previously, when the bulk of mining was manual. The manager of a mine should therefore consider himself as primainter-pares (first-among-equals), and as a leader of the team, in regard to all aspects of mining, i.e. safety, conservation and extraction, considering the increasingly mechanised means which are now being adopted. The Electrical and Mechanical engineers should not be given a sense of inferiority in this respect, as their contribution will be as valuable as that of mining engineers. I am happy therefore to know that ISM has introduced a number of inter-disciplinary courses at various levels. More such courses would be very valuable to the Industry. I am also happy to note that a separate B. Tech. course in opencast mining has now been introduced, and hope, that the industry will take full advantage of this by utilisation of graduates in this new disciplines in opencast mining, whilst graduates passing out the conventional courses are used basically in underground projects, though a limited number of exchanges may be feasible. In making this point, I am only stressing that technical knowledge gained in a particular field of mining should not be lost sight of or overlooked, and the maximum advantage should be taken of such knowledge . . ." □

Seminar-cum-Symposium on Examination Reform at Saurashtra University

A Seminar-cum-Symposium on Examination Reform was held during 9th and 10th February, 1985 in the Senate Hall of Saurashtra University. Deans of Faculties of Universities situated in Gujarat and Chairmen and others from the Boards of Studies of Saurashtra University attended the Seminar. Ex-Vice-Chancellor, Syndicate Members, Members of College Development Council and Heads of University Departments of Saurashtra University also attended the Seminar. Shri R.B. Shukla, Vice-Chancellor of Saurashtra University delivered the Presidential Speech. Expert help was drawn from the resource personnel on UGC Panel of Examination Reform. Dr. R.P. Singhal, Executive Director of National Institute of Educational Planning and Administration, New Delhi and Prof. V. Natarajan, Project Director (Exams) from Association of Indian Universities delivered Keynote Addresses on Examination Reform—A Plan of Action and Question Banking—its uses and implications and Grading and Calibration of Marks respectively. Prof. Mehrotra from Delhi University also addressed the participants. Prof. C.J. Bhatt, Director of College Development Council conducted the deliberations. Participants actively participated in the Seminar and the following recommendations were unanimously made for all the universities in Gujarat:

(1) This Seminar felt that reform of examinations was an urgent need and suitable measures had to be taken to mitigate the evils of the system.

(2) Short term measures as well as long term measures should be adopted in order that examinations serve their purposes in an appropriate manner.

(3) As a short term measure, techniques of evaluation should be improved and new and innovative methods of evaluation should be employed so that quality of question paper is improved. Possibility of introducing Question Bank and Grading may be explored.

(4) In view of the large number of students taking public examinations these days, the possibility of decentralising examination process may be explored. The alternative model suggested by Dr. Singhal may be examined by academic bodies of the University.

(5) As a long term measure, examinations should not be looked at in isolation. They should be treated as means to improve the teaching/learning process and thereby serve as an instrument of improving the quality of higher education. Workshops may also be organised in the area of New Technologies in Higher Education.

(6) University has a very important role to play in improving evaluation and teaching process. It should organise training of teachers and examiners on a large scale to improve their professional competence, in areas of item/question writing, internal assessment, and grading.

(7) Workshops and refresher courses should be organised with the help of various national level institutions of teacher training for the sole purpose of improving the quality of question papers.

(8) Not only teachers, but also, the community including the employers should be oriented to the new concepts of evaluations.

Seminar on News & New Technology at BHU

A seminar on News and New Technology organized by the Department of Journalism and Mass Communication, Banaras Hindu University, in collaboration with the United States Information Service, New Delhi, was held at the Department of Journalism & Mass Communication, B.H.U., on January 15 & 16, 1985.

The Seminar, attended by about 20 senior journalists from all parts of Uttar Pradesh, was inaugurated by Mr. Rajendra Mathur, Editor, Nav Bharat Times, New Delhi. Dr. Iqbal Narain, Vice-Chancellor, Banaras Hindu University, presided over the inaugural function. Professor R.E. Stannard, Chairman, Department of Journalism, at the Western Washington University, and now a visiting professor at the American University in Cairo, was the main speaker at the seminar.

In his inaugural address, Mr. Mathur spoke on the problems of language journalism, with special reference to Hindi Journalism, in the country. He asked the editors to take advantage of the technological innovations in the field of printing and production to reach the rural masses who are ill-served now.

Dr. Iqbal Narain, in his presidential address, called for a new orientation towards development and social change in news writing activities, and reminded the editors of their role of social responsibility.

Prof. Stannard, in his two lectures on "What will make news in 1984" and "News and New Technology", delved on the technological advances made in the field of communication in the last two decades. The new technology has not only made information easily accessible to the people, but also it is increasingly becoming cheaper to get information. Also, the new technology will give greater control to the consumer to choose and pick the kind of information he would like to get.

Although technology has made information cheaper, easy and more user-oriented, it is difficult to visualise its consequences on content, said Prof. Stannard. He was confident however that information control will become more and more decentralised in the years ahead because of the advances in technology.

Prof. Anjan Kumar Banerji, Head, Department of Journalism & Mass Communication, Banaras Hindu University, speaking on 'Journalism Education in India and the US', called for greater co-operation between the two countries in terms of exchange of teachers and reading material. He recalled the growth of journalism education in the country, and spoke of the challenges it had to face in view of the fast technological advances in the media industry. Prof. J.S. Yadav of the Indian Institute of Mass Communication, New Delhi, who presided over the session, suggested for an orientation towards research that should be inculcated in the student planning to get into the business of communication.

Mr. K.B. Mathur, Editor, Amrit Prabhat, Lucknow, presided over the session on 'News and New Technology'. Mr. Virendra Singh, Editor, Swatantra Bharat, Lucknow, summed up and delivered the valedictory address.

KKV organizes training in instructional technology

The Konkan Krishi Vidyapeeth, Dapoli (Ratnagiri) organized "Training in Instructional Technology" for the benefit of the academic staff of the KKV at the College of Agriculture, Dapoli. This training was organized to improve the teaching and evaluation skills of the teachers and to acquaint them with the modern teaching techniques and use of different types of teaching aids.

During his inaugural address, Dr. Prataprao Salvi, Vice-Chancellor, Konkan Krishi Vidyapeeth, Dapoli said that since independence education had expanded tremendously and it had now become imperative to improve the quality of education. In his speech, he stressed that the education process must be made more effective, meaningful and be able to remove the enmass frustration in the student community. He pointed out that there were three elements in the education process to make learning more effective by the learner. These elements were the teacher, the learner and the class. All these three formed the learning situation. He said, it was the responsibility of the teacher to make teaching more effective by emphasising important ideas in a variety of ways. Dr. Salvi further said that to make the education process effective, the teacher should take the help of audio-visual aids to project the subject matter more attractively. He suggested that practicals should form the component of teaching as 'learning by doing' was very important. Further, he pointed out that at present methods and techniques being used in higher education were more conventional and centered around lecture method. Modern technology had a lot to offer and it was for teachers in the university to make use of those technologies as a tool in order that their job of teaching and instructing became meaningful, interesting and stimulating to the student community.

Dr. Salvi said that the teacher had to perform the difficult task of lesson preparation. Hence, lesson preparation should be pre-planned. He hoped that the 'Training in Instructional Technology' would be useful in improving the knowledge, skill and attitude of the trainees in making their job more effective.

Earlier, Dr. J.G. Patil, Director of Extension Education welcomed the Vice-Chancellor and gave a brief outline of the purpose and objects of the training class. He pointed out that during the training class eminent professors from outside the university were invited as resource persons.

International conference on Parapsychology held at Andhra Varsity

A two-day International Conference on "Parapsychology — Eastern and Western Perspectives" was held at Andhra University, Waltair during January 7-8, 1985. It was preceded by a pre-conference programme on 6th January. This programme, presided over by Prof. K. Ramakrishna Rao, Vice-Chancellor, Andhra University, featured a series of lectures on yoga and meditation. Prof. Rao in his presidential address stated that Yoga is the greatest contribution of India to humanity and mentioned plans that the Andhra University had for organising an institution for yoga studies in the University. He said the present electronic advancement had helped to record individual experiences of yoga for the benefit of the people at large and expressed the view that the next revolution in knowledge could follow the interpretation of the mind through yoga. The key note address was delivered by Dr. H.R. Nagendra of the Vivekananda Kendra, Bangalore. He outlined how an integrated approach of yoga therapy could be used for curing physical ills. He opined that yoga was a systematic study of the mastery over the mind and could serve as an input to develop the total personality of the human being. The lecture session was followed by yoga demonstrations presented by Sri D.N. Rao and others of the Institute of Hathayoga and Rajayoga, Parvalipalem and Sri Yogiraja Vaidyaraja and Sri S. Lakshminarayana of Visakhapatnam.

The conference was formally inaugurated by Dr. John Beloff of the University of Edinburgh who spoke on 'Parapsychology — the Western Perspective' taking it to mean the scientific approach to Parapsychology. He emphasized the inadequacy of the Western approach to the understanding of paranormal phenomena. Prof. K. Satchidananda Murty of Andhra University in his address spoke on the Eastern perspective and presented a critique of paranormal powers as contained in select Hindu religio-philosophical literature.

Plenary lectures were delivered by Dr. A.C. Paranjpe of Simon Fraser University, Canada, and Dr. Yvonne Duplessis of Paris. Dr. Paranjpe spoke about Parapsychological concepts in the context of Pantanjali's Yoga system, while Dr. Duplessis reviewed the research conducted in the U.S.S.R. and France on dermo-optical perception and synthesis. Dermo-optical perception refers to the sensitivity of the skin to invisible radiations of the electromagnetic spectrum, situated in the infra red range.

In all 27 papers were presented by foreign and Indian participants covering the subjects: (1) Cognitive variables and subjective states, (2) Some Eastern view points, (3) Reincarnation, (4) Parapsychology and Physics, (5) Sociology of the Paranormal, and (6) Psi experience. The foreign delegates included Dr. D.J. Bierman (University of Amsterdam, Netherlands), Dr. J. McClenon (University of Maryland, USA), Dr. Elman Gruber (Forum International, Freiburg, W. Germany), Dr. Suji Otani (Japanese Society for Parapsychology, Tokyo) and Dr. H. Kanthamani (Institute of Parapsychology, Durham, USA).

Seminar on Konkan Society : From Ancient to Modern Times at Pune

The above seminar was held at the University of Poona under the joint auspices of the University Grants Commission and the University Department of History from 7th to 9th December, 1984.

Prof. A.R. Kulkarni, Director of the Seminar summarized briefly in his introductory remarks the long antiquity of the history of Konkan. Konkon, which includes traditionally the strip west-coast from Surat to Karwar, witnessed several ruling powers, indigenous and foreign, yet retained its distinctive social and economic pattern. A study of the Konkan society is a desideratum. It is expected that this interdisciplinary seminar which included scholars from Sociology, Geography, Archaeology, Economics and Political Science would stimulate research in Konkan Society, a hitherto neglected field of study.

Prof. R.N. Dandekar, the Hon. Secretary of Bhandarkar Oriental Research Institute discussed in his inaugural speech the various schools of History. In the light of contribution made by Ranke, Marx, Toynbee, etc. to historiography he suggested that religion, social dynamics, economic dynamics should form the basis of history. He indicated how the emphasis in historiography shifted from the ruler to the ruled, from state to society, from palaces to cottages and from weapons of war to means of production in the course of time.

Professor Romila Thapar in her key-note address mainly dealt with the significance of regional history with special reference to Konkan region. She defined region and stated that regional history did not mean the history of a community of that region, but of the historical and geographical region. She emphasised the historical definition of a region which went beyond the narrow geographical region, and included a part of the hinterland playing an important role in influencing the historical process of that region, particularly economic and cultural history. She said historical identity encouraged research, new sources were discovered—both Archaeological and Archival—and new questions were asked. Such a study should ultimately lead to the integration of the region with the larger whole. In her speech she dealt at length with the relation between Konkan and hinterland, trade-routes, importance of ports like Sopara, the Mauryan rule in Konkan and several other allied topics.

The Seminar felicitated Senior historians: Dr. G.H. Khare, Dr. P.M. Joshi and Dr. V.T. Gune for their valuable contribution to the history of this region.

On 7th Dec., 1984, in the I and II Academic Sessions papers relating to Archaeology and Ancient period were read. Several scholars presented their papers discussing various aspects of Konkan Society in the ancient times. There was also a talk on the distinguishing features of Konkan Society.

Professor Romila Thapar presided over this session.

The III and IV Sessions which were held on the 8th Dec., 1984 were devoted mainly to the Medieval period. Prof. P.M. Joshi (III) and Dr. Ashin Das Gupta (IV) chaired these sessions.

On the last day, 9th Dec., sessions V & VI dealt with modern times. Research papers dealing with geographical, social, political, economic and cultural aspects of Konkan were presented in these two Sessions. Dr. G.H. Khare (V) and Dr. V.T. Gune (VI) conducted the proceedings of the day.

Professor Romila Thapar presided over the valedictory function and made valuable suggestions regarding the development of this 'theme' of Konkan Society as a full-fledged research project.

In all 40 papers were presented in the six sessions of the seminar. 'Konkan' being one of the thrust areas of research of the History Department, this interdisciplinary Seminar helped the scholars in providing guidelines of further research.

OU hosts Seventh All India Persian Teachers conference

The Seventh All India Persian Teachers Conference held under the joint auspices of All India Persian Teachers Conference and Osmania University, was inaugurated by His Excellency Dr. Ibrahim Behnam, Ambassador, Islamic Republic of Iran on February 9, 1985. Mr. Syed Hashim Ali, Vice-Chancellor of Osmania University, presided.

In his presidential address, Prof. A.A.H. Abidi, stated that a conference is being held in land of Satavahana, Kakatiyas, Chalukayas, Bahmanis, Qutibshahis and Asafiajis. Telugu, its regional language is one of richest languages of the country. The great poet Vemana may be truly called the "Sa'da" of Telugu" as both share the same approach to human relationship. He added that Persian and Telugu Languages had enriched one another and had helped in producing a new language, Dakani or Urdu which is a symbol of our composite culture and unity in diversity.

At Golkonda, a great seat of learning, the most famous Persian lexicon, 'Burhan-i-Qate' was written. The Persian speaking world bowed its head in reverence to Abdullah Qutb-Shah whose liberal patronage to literature was instrumental in producing this masterpiece. He also paid rich compliments to the valuable services rendered by Dar-Ut-Tarjuma, Dairat-Ul-Ma'drif' and Islamic Culture.

His Excellency Ambassador of Afghanistan declared open an exhibition of rare books and manuscripts in Persian at the University Library. Earlier in his presidential remarks Mr. Syed Hashim Ali, Vice-Chancellor of Osmania University, pointed out that Hyderabad had a longer association with Persian Languages.

The Head, Department of Persian, welcomed the guests and Mr. Askari Rad, Cultural Attache, Islamic Republic of Iran, delivered the inaugural address. The three-day conference concluded on February 11, 1985.

Bio-Tech Institute at AMU

A postgraduate Bio-Tech Institute has started functioning in the Aligarh Muslim University. The Institute will conduct research in Genetic Engg., Tissue Culture and Enzyme Engg.

The Institute of Enzyme Fermentation and Bio-Technology has been set up at a cost of Rs. 5 million. This will also impart educational training in computer science to students and researchers.

Five science students have already been selected by the university this year for various courses in the bio-technological field. It will concentrate in the areas that are presently at the frontiers of Modern Biology, Immunology, Cell Biology and Fermentation.

The Institute, according to the Director Dr. Salah-u-din, has received a grant of Rs. 2 million from the United States under the PL-480 programme for research in Nitrogen Fixation. The programme is to be started in collaboration with the Chicago University.

Seminar on problems of teaching English at Shri Shivaji College, Parbhani

The UGC sponsored Humanities and Social Sciences Improvement Programme Unit of Shri Shivaji College of Arts, Commerce and Science, Parbhani, organised a one-day seminar on 'Problems of Teaching English at the Senior College level' on 17 Feb. 1985. The seminar was inaugurated by Shri Kabir Ahmed, Asst. Station Director, All India Radio, Parbhani and was presided over by Shri Shrikant R. Tambe, Lecturer and Head, Dept. of English, S.B. College of Arts, Commerce, Aurangabad. Besides lecturers and teachers from various colleges and schools, Shri G.J. Joshi, District Education Officer, Zilla Parishad, Parbhani and Dr. K.B. Deshpande retired professor of Botany, Marathwada University, Aurangabad attended the seminar.

About a dozen papers were presented on "Attitudes of English Teachers" and 'Basic Problems in teaching English as a Foreign Language' by the lecturers and a couple of papers on the difficulties and fears in learning English' were presented by Shri Salve and Ansari, students of the host college. The papers hightlighted the apathy of the society towards English language, the absence of motivation on the part of the students, the non-availability of teachers trained on modern methods of teaching English, lack of exposure to English, over-crowding in the compulsory English classes and a lack of awareness in the students of the utility of English and were some of the points discussed at length during the paper reading sessions which were chaired by Dr. S.K. Patil and Shri S.R. Tambe.

The seminar was organised under the auspices of the COHSSIP unit. Shri A.L. Mohan, Principal, Shri Shivaji College, Parbhani in his address to the participants emphasised the need to improve the standard of English. Shri M.B. Prabhu, lecturer in English who is the convener of the seminar welcomed the delegates and spelt out the objective measures in teaching English. The seminar ended with a vote of thanks proposed by Shri A.S. Ratnam, Head, Deptt. of English, Shri Shivaji College, Parbhani.

PAU students help villagers for free medical check-up

The National Service Scheme (NSS) Wing of the Punjab Agricultural University in collaboration with the local Lions Club (Central), organised a free medical check-up camp at Guram in Ludhiana district on March 3, 1985.

Mr. N.S. Pasha, Programme Co-ordinator of the NSS Programme told that the camp was being organised in observance of the International Year of Youth 1985. The NSS volunteers helped the villagers in getting free medical treatment from the senior experts including Eye Specialst, Children Specialist, Gynaecology Specialist and General Medicine Specialist who will conduct the health check-up at this village. Minor surgical operations will be done at the spot. After thorough check-up and diagnosis of the patients, expert medical advice will be offered and some medicines will also be distributed free of charge.

"Design for Living" exhibition at Pantnagar

Under the Silver Jubilee Year Celebrations of the Pantnagar University, an interesting, exhibition on "Design for Living" depicting fanciful styles and ideas on interior home decoration was organised by the Home Management Department of Home Science College.

The highlights of the exhibition, which was inaugurated by the Vice-Chancellor, Shri Kripa Narain, included "Design Awareness, walls that speak a volume, make the most of your floors, furniture—the style of your life, dress your windows, design for limited space and do it yourself projects".

News from Agril. Varsities

PAU releases new cotton variety

The Punjab State Variety Approval Committee which met at Ludhiana recently under the Chairmanship of Mr. Sukhjit Singh Sandhu, Director of Agriculture, Punjab, approved a new variety of American cotton, LH 900 for cultivation in the state.

The new variety, developed by a team of young scientists of PAU under the leadership of Dr. T.H. Singh, Senior Cotton Breeder and Zonal Co-ordinator, (North Zone) has a yield potential of upto 16 qtl/acre (with an average yield of about 11 qtl/acre). Dr. T.H. Singh said that the duration of the crop was short and it was suitable for sowing from mid-May onwards. It may be noted that about 70 per cent of the area under cotton in Punjab is sown between mid-May to mid-June. The plants of this variety grow about 3½ ft and so it is very easy for the labourers to spray insecticides for the control of insect pests. The short plant height would facilitate its spray with the help of tractor mounted sprayers with which the application of pesticides is very uniform and more effective. The most important feature of this variety is that farmers are free from their wheat crop by the time this variety is to be sown after mid-May. The fruit formation in LH 900 starts about 45 days after sowing and so the farmers are advised to start spray against bollworms starting from the beginning of 4th week of July at 10 days intervals.

The Director of Agriculture, Punjab said that Punjab grows cotton on 5 to 6 lakh hectare area annually. He hoped that the state is likely to produce 12 lakh bales of cotton from 5 lakh hectares thereby producing about 425 kg of lint per hectare as against an earlier record of 376 kg of lint per hectare obtained in 1974. He hoped that this high yielding variety would increase the total production and productivity of cotton in the state and would improve the economic prosperity of cotton growers. He mentioned that new variety coupled with good plant protection measures may raise the Punjab yield by 800 kg lint per hectare.

BHU National Seminar on Plant Physiology

A national seminar on Plant Physiology was jointly held from February 21 to 23, 1985 by the Department of Plant Physiology, Institute of Agricultural Sciences, Banaras Hindu University, Varanasi, and the Indian Society for Plant Physiology. Various aspects regarding physiological basis of Plant Productivity, both basic and applied, were covered in the sessions on growth, development and yield in crop plants; nitrogen metabolism and nitrogen fixation; stress physiology; environmental physiology, mineral nutrition of plants and chemical regulation of growth. A total of 103 papers were presented.

The deliberations of this seminar were summarised in the plenary session by the Chairman, Dr. B.K. Gaur, President, Indian Society for Plant Physiology with the help of the rapporteurs and Chairmen of the different sessions.

Based on the discussions and paper presented, the following recommendations were made at the plenary sesson :

(1) Various funding agencies like the Indian Council of Agricultural Research, University Grants Commission, Department of Science and Technology, Department of Atomic Energy, Council for Scientific and Industrial Research and Department of Environment should support, more liberally than at present, research and teaching activities in the discipline. Many of the laboratories, for carrying on more meaningful and more pro-

News from UGC

UGC Junior Research Fellowship Test in June 1985

The University Grants Commission will hold a national level test on June 16, 1985 at 74 centres spread all over the country in a number of subjects. The candidates who will qualify in this test will be eligible for the award of such fellowships already allocated to the Universities under the general scheme or under various quality programmes, such as, Centres of Advanced Study, Departments of Special Assistance, Major Research Projects, Area Studies etc.

Candidates below the age of 30 years (40 years in the case of women candidates) with either a high second class Master's degree and second class Bachelor's degree or at least a second class Master's degree and first class Bachelor's degree are eligible to appear in this test.

The proposed test will not include the following subjects: Physics, Chemistry, Mathematics, Life Sciences, Geology, Geography, Economics, Political Science, Philosophy, Sociology and History and some of the related subjects like Organic Chemistry, European History, Ancient Indian History & Culture, and Public Administration.

The last date for registration of candidates for this test in the prescribed proforma with the test Centres is April 10, 1985.

ductive research, urgently require modern equipment.

(2) A need was felt for the various departments to be encouraged to have environment controlled facilities, like growth chambers, to enhance their capacity to do more precise and reproducible research.

(3) Staff position, both for teaching and research activities, are not adequate in the existing departments of Plant Physiology, and of Botany and in the various All India Coordinated Research Projects. This must be remedied at the earliest.

(4) In view of the increasing role of plant Physiology in crop productivity and its impact on allied spheres like Plant Breeding, Genetics, Plant Chemicals Research and Biotechnology, it was felt that the number of independent departments of Plant Physiology, in the country, is far from adequate. This Lacuna deserves serious attention of the various concerned funding agencies, by way of providing separate and independent departments of Plant Physiology in the Universities, particulary in the Agricultural ones.

PAU Kisan Mela on March 21 & 22

The two-day annual Kisan Mela of the Punjab Agricultural University will be held on the campus on March 21 and 22. The theme of the mela this year is 'Agricultural Productivity Through Improved Technology'.

According to Dr. K.S. Nandpuri, Director of Extension Education of the PAU, the visiting farmers will be shown excellent *rabi* crops grown on the research farms by following the latest farm technology. They will be apprised of the new crop varieties, judicious use of farm inputs, plant protection methods, time and labour saving farm implements, high-producing cows and buffaloes and home management. More stress will be laid on diversification of agriculture and the farmers will be advised to adopt new skills like growing of mushrooms and vegetables, bee-keeping, poultry farming and dairying to supplement their income.

A big agro-industries exhibition and a colourful cultural programme will be the other highlights of the Kisan Mela.

We Congratulate...

Dr. A. Gnanam who has been appointed Vice-Chancellor of Bharathidasan University, Tiruchirapalli.

Indian school of Mines

DHANBAD-826004

No : 615120/85 **Dated : 16-2-1985**

ADMISSION TO DISM/M.TECH PROGRAMMES

1.0 Applications are invited for admission to following Postgraduate programmes for academic session 1985-86 commencing on 17.6.85 at ISM, a deemed University since 1967 under the UGC Act.

2.1 DISM/M. TECH in Engineering Disciplines

M. Tech programmes in Engineering subjects at ISM, in common with other Universities, are of 3-Semester duration. A unique feature at ISM however, is the award of a postgraduate DIPLOMA OF INDIAN SCHOOL OF MINES on completion of the first two semesters of Course Content in programmes as indicated below. The third-semester project work leading to award of M. Tech degree could be done either in the Institution or on-job at place of work.

Discipline		Eligibility Qualification
(1) Fuel Engg (6 seats)	—	B. Tech or equivalent in Fuel/Chem/Met/Mech/Min Engg.
(2) Maintenance Engg & Tribology (6 seats)	—	B. Tech or equivalent in Mech/Prod/Min Engg/ Mining Machinery.

2.2 M. TECH in Earth Science Disciplines

MASTER OF TECHNOLOGY ; M. Tech programmes in Earth Science disciplines at ISM are of 2-semester duration.

Discipline		Eligibility Qualification
(1) Geophysical Instrumentation & Techniques (6 seats)	—	M.Sc. Tech in Appl Geophysics.

3.1 Admission would be made of candidates who have qualified in GATE, on the basis of GATE score and Test/**viva-voce** conducted at ISM. No TA/DA shall be admissible for appearance at the Test/viva.

3.2 15% of seats are reserved for scheduled Caste and 7½% of seats for Scheduled Tribe candidates, if available; otherwise they will be treated as unreserved.

3.3 Other things being equal, preference shall be given to sponsored candidates; sponsorship in this context means retention of lien on post and grant of suitable allowance by the concerned organisations. Applications of these candidates should carry endorsement to this effect from the employer.

3.4 In case where less than 4 students qualify and seek admission to a P.G. course, the School may not run the course.

3.5 **Scholarship** *:* Non-sponsored candidates admitted to the above programmes will be eligible for scholarship of Rs. 1000/- p.m. for a period not exceeding the duration of the programme.

4. **How to apply** *:* Applications on prescribed forms should reach the undersigned, by **15th April, 1985** at the latest. The forms are obtainable by sending a crossed postal order for a sum of Rs. six only, (made payable to the Registrar, Indian School of Mines, Dhanbad-826004 at ISM Post Office, Dhanbad) along with a self-addressed unstamped envelope of size 23cmx10cm.

S.P. Varma
REGISTRAR

AIU Library & Documentation Services

One of the important functions of the Association of Indian Universities is to act as a clearing house of information on higher education in the country. Towards this end the AIU Library is engaged in collection building and developing instruments for the dissemination of research information. Over the years a valuable collection of books and documents on different aspects of higher education has been acquired.

The Library has also developed Bibliography of Doctoral Dissertations as an effective tool in the dissemination of research information. Retrospective bibliographies covering the period 1857-1970 and 1970-75 were the first to appear. Effective 1975, however, the bibliography is issued annually in two volumes. One volume deals with Natural and Applied Sciences while the other records doctoral degrees awarded in Social Sciences and the Humanities. In addition to the normal bibliographical details like the name of the Research Scholar, the title of the thesis, years of registration for and award of the degree, and the name of the University accepting the thesis for award of a doctoral degree, the bibliography also gives name and complete address of the supervising teacher and an availability note that seeks to inform whether a copy of the dissertation is available for consultation and use in the University Library/Department or Registrar's Office.

The columns 'Theses of the Month' and 'Research in Progress' are intended to cut out the time lag between the receipt of information and its inclusion in bibliography. Such Universities as are not sending us regular information in respect of Doctoral Theses accepted and research scholars enrolled are welcome to make use of these columns.

The Library is situated at 17-B, Indraprastha Marg, New Delhi-110002. It is open from 10 a.m. to 5 p.m. Monday through Saturday except Second Saturday.

RESEARCH IN PROGRESS

A list of Research Scholars Registered for Doctoral Degrees of Indian Universities

PHYSICAL SCIENCES

Mathematics

1. Jai Swarup. *Some problems on fixed point theorem.* HS Gour, Sagar. Prof. P.L. Sharma.

2. Sharma, Hoshyar Chand. *Experimental designs through PD-cycles and automorphisms and fitting of some quadratic models.* HPU, Shimla. Dr. S.N. Dube.

Statistics

1. Suja, M.P. *Modification of stochastic models of certain communicable diseases.* U Ker, Trivandrum. Dr. R.N. Pillai.

Physics

1. Arora, Satish Chandra. *Dynamics of disordered condensed systems.* U Delhi. Dr. S.P. Tewari.

2. Arvinder Kaur. *Some theoretical problems in electronics.* U Delhi. Dr. P.K. Srivastava.

3. Basu, Pramita. *N-N and 3-N dynamics in quark model.* U Delhi. Dr. V.S. Bhasin.

4. Bota, Shashikant R. *Theoretical investigations of self-focusing phenomena in various nonlinear media.* Shivaji U, Kolhapur. Dr. M.K. Soudagar.

5. Dhaul, Anuradha. *Particle physics: Theoretical aqcd oriented relativistic dynamics for few quark system.* U Delhi. Prof. A.N. Mitra.

6. Gupta, Anju. *CP violation 6 quark models.* Pb U, Chandigarh. Dr. M.M. Gupta.

7. Jagdish Kumar. *Phase transition studies in metallic and non-metallic systems.* U Delhi. Dr. P.C. Jain.

8. Khan, Asad Ali. *Waves and transport in space plasma.* U Delhi. Dr. G.L. Kalra.

9. Malik, Mamta. *Transport of fast neutrons in Pb (lead).* U Delhi. Prof. L.S. Kothari.

10. Omvir Singh. *Medico physical studies on leprosy.* U Delhi. Dr. M.M. Bajaj.

11. Rao, Padmavati. *Radiowave absorption in the ionosphere.* U Delhi. Dr. C.S.G.K. Setty.

12. Shukla, Nutan. *Study of polytypism in crystal to relative crystal growth.* U Delhi. Dr. G.C. Trigunayat.

Chemistry

1. Ajay Kumar. *Synthesis of bioactive compounds.* U Delhi. Prof. A.C. Jain.

2. Ali, Mohammad Azhar. *Studies on some macroscopic properties of partially miscible liquid pairs.* Pb U, Chandigarh. Dr. M.L. Lakhanpal.

3. Beena Kumari. *Cyclic voltammetary at the tubular graphite electrode.* Pb U, Chandigarh. Dr. J.D. Sharma and Dr. B.K. Dewan.

4. Das, Sanghamitra. *Physicochemical investigation of micelle.* U Delhi. Dr. A.N. Mitra.

5. Deshmukh, J.G. *Polymer supported reactions in organic synthesis.* Shivaji U, Kolhapur. Dr. M.M. Salunkhe.

6. Jain, Tanoj Kumar. *Physicochemical investigation of reverse micelles.* U Delhi. Prof. A.N. Maitra.

7. Mann, Raj Rani. *Synthetic studies in heterocyclic compounds as potential therapeutics.* U Delhi. Dr. V.K. Ahluwalia.

8. Mehta, Vimal Deep. *Chemistry of natural products.* U Delhi. Prof. S.R. Gupta.

9. Neelam. *Syntheses in sex pheromones.* Pb U, Chandigarh. Prof. O.P. Vig and Dr. M.K. Sharma.

10. Rusia, Kalpana. *Phytochemical investigation of some Indian medicinal plants.* HS Gour, Sagar. Dr. S.K. Srivastava.

11. Sharma, Gian Chand. *Kinetics and mechanism of complexing of metal ions with bio-chemical ligands and other related ligands.* U Delhi. Dr. H.C. Malhotra

12. Sharma, Harish Kumar. *Bimetallic, mono alkonides and study of their physical and chemical properties.* U Delhi. Dr. P.N. Kapoor.

13. Suman Jeet Kaur. *Linear sweep voltammetry at the tubular graphite electrode.* Pb U, Chandigarh. Dr. J.D. Sharma.

14. Talukdar, Ajit Chandra. *Chemistry of natural products.* U Delhi. Dr. S.R. Gupta.

Engineering & Technology

1. Jotshi, Chand Kiran. *Kinetics and thermophysical studies of salt hydrates for energy storage applications.* Pb U, Chandigarh. Dr. S. K. Sharma.

BIOLOGICAL SCIENCES

Anthropology

1. Sharma, Kashi Kailash Nath. *The effect of maternal foetal A B O blood group incompatibility on the post natal growth and development of the Khairwar tribal children of Madhya Pradesh.* HS Gour, Sagar.

Botany

1. Agarwal, Manjula. *Biochemistry.* U Delhi. Prof. S.C. Maheshwari and Dr. A. Rashid.

2. Ghadge, D.N. *Studies in discomycetous fungi.* Shivaji U, Kolhapur. Dr. M.S. Patil.

3. Jain, Sangeeta. *Embryology of angiosperms.* U Delhi. Dr. M.R. Vijayaraghavan.

4. Kabi, Ashes. *Leguminous green manures and their decomposition in association with earthworms.* Sambalpur U. Dr. T. Kabi and Dr. B.K. Senapati.

5. Kathal, Rekha. *Experimental embryology.* U Delhi. Dr. S.P. Bhatnagar.

6. Kushal Bala. *Physiological and biochemical aspects of telotoxicity and eradication of* **Lantana camara** *L.* Pb U, Chandigarh. Dr. R.K. Kohli.

7. Mirje, Rajani G. *Studies on the upper Gondwana plants from the east coast of Tamil Nadu.* Shivaji U, Kolhapur. Dr. B.M. Vagyani.

8. Pawar, Madhukar. *Studies on the interaction of phenolic compounds with abseissic acids, ethephon and indolacetic acid in the control of abscission.* Devi Ahilya, Indore. Dr. M.M. Laloraya.

9. Sarada, K. *Histochemical and scanning electron microscopic studies on some oil yielding seeds.* U Delhi. Prof. N.N. Bhandari, and Prof. S.P. Bhatnagar.

10. Sharma, Neelima. *Histochemical and scanning electron microscopic studies on oil yielding seeds.* U Delhi. Prof. N.N. Bhandari and Prof. S.P. Bhatnagar.

11. Tamot, Bhaju Krishna. *Plant growth and development.* U Delhi. Dr. S.C. Maheshwari.

12. Tripathi, Diwakar. *Physiology of growth annd differentiation.* U Delhi. Prof. S.C. Maheshwari and Dr. A. Rashid.

Zoology

1. Chadha, Neeraja. *Study of gonadotropin action.* U Delhi. Dr. K. Muralidhar.

2. Chowhan, Jaininder Singh. *Studies on some acanthocephalan parasites of fishes from Gobind Sagar lake and its distributory canals in North India.* Pb U, Chandigarh. Prof. N.K. Gupta and Prof. S. Khera.

3. Kapania, Reena. *Reproductive endocrinology.* U Delhi. Dr. R.N. Saxena.

4. Kohli, Rita. *Study on the action of gonadotropins.* U Delhi. Dr. K. Muralidhar.

5. Navdeep Singh. *Breeding biology of cattle egret,* **Bubulcas ibis coromundus** *(Boddart) alongwith some observations on its population.* Pb U, Chandigarh. Prof. S. Khera and Dr. H.R. Pajni.

6. Pani, Suresh Chandra. *Aspects of ecological studies of tropical earthworms in irrigated agricultural system of Orissa, India.* Sambalpur U. Dr. M.K. Senapati.

7. Sachdeva, Jaswant Singh. *Insect reproduction.* U Delhi. Dr. S.S. Sehgal.

Agriculture

1. Kushwaha, Satyandra Singh. *Studies on response of soybean to phosphatic fertilizers and subsequent cumulative effect on wheat.* Devi Ahilya, Indore. Dr. Y.M. Upadhyaya.

THESES OF THE MONTH

A list of Doctoral Theses Accepted by Indian Universities

PHYSICAL SCIENCES

Mathematics

1. Abbas, Mohammad. *An exact analysis for mass transfer in a hollow-fibre artificial kidney performing simultaneous dialysis and ultrafiltration.* IIT, Bombay.

2. Acharyya, Sudipkumar. *Some eigen value problems associated with a matrix differential operator.* U Calcutta.

3. Adhya, Indira. *Studies on the motions of a perfect fluid and the problems of singularities and related topics in general relativity.* U Calcutta.

4. Biswas, Devaiyoti. *A theoretical study of blood flow through narrow tubes with application to cardiovascular diseases.* IIT, Bombay.

5. Dandawate, Prabhakar Narhar. *On designs with generalized incidence matrices.* IIT, Bombay.

6. Dwivedi, B.N. *The study of higher transcendental functions.* BKU, Jhansi.

7. Inderjit Kaur. *Optimal control policies of some queueing models.* Kurukshetra U.

8. Katre, Shashikant Anant. *Complete solution of the cyclotomic problem for a prime modulus and related topics.* Pb U, Chandigarh.

9. Naidu, Guttapalle Narasimhulu. *Some studies on shock waves and detonations.* IIT, Bombay.

10. Prayag, Prakash Shripatrao. *Contributions to the theory of convergence structure.* Nagpur U.

11. Radhakrishna Pillai, A.C. *Difference methods for the numerical solution of hyperbolic systems and singular perturbation problems.* IIT, Delhi.

12. Rangarao, Nagadadinni Pralhad. *Mathematical models for blood flow and their applications to blood diseases.* IIT, Bombay.

13. Srinivasa, B.R. *Stability and singularity in general theory of relativity.* Bangalore U.

14. Surma Devi, C.D. *Unsteady laminar boundary layer flows.* Bangalore U.

15. Yugnaseshan, Venkateswaran. *Some problems involving cracks and inclusions in plane elasticity theory.* IIT, Bombay.

Statistics

1. Gupta, Archana. *Some problems in discrete stochastic processes.* U Delhi.

2. Saxena, Kuldeep Kumar. *Some contributions to jackknife methodology and its application.* HAU, Hissar.

3. Taneja, Sushma. *Some problems on symmetric random walk.* U Delhi.

Astronomy

1. Srinivasnarasimhan Chari, K.S.V. *Some signatures of galactic collisions.* OU, Hyderabad.

Physics

1. Bhargava, Anuradha. *Quantum mechanical wave equations and their various applications in high energy physics.* RDV, Jabalpur.

2. Bhave, Vidyadhar Reghunath. *Point discharge current studies in the lower atmosphere with special reference to environmental pollution.* Nagpur U.

3. Bhuyan, Pradip Kumar. *Satellite radio beacon studies of the ionosphere.* Kurukshetra U.

4. Chaudhari, Anant Laxmikant. *Studies on physico-chemical properties of natural scolecite and stilbite and synthesis of some zeolites by hydrothermal method.* SPU, Vallabh Vidyanagar.

5. Hanumantha Rao, N.S. *Study of microwave magnetic relaxation processes in rare-earth substituted garnets using a new technique.* IIT, Bombay.

6. Joshi, Vasant Vamanrao. *Studies on some aspects of mineral zeolites and hydrothermally synthesised zeolites.* SPU, Vallabh Vidyanagar.

7. Krishnasamy, V. *The crystal and molecular structure determination of some biologically active compounds by x-ray diffraction methods.* IIT, Bombay.

8. Mandal, Chittaranjan. *Heavy ion-atom collisions at intermediate and high energies.* U Calcutta.

9. Mehta, Sheilly. *High energy potential scattering with applications.* RDV, Jabalpur.

10. Ojha, Satyendra. *EPR study of transition metal ions and free radicals in some malonates.* IIT, Bombay.

11. Ramjee, Maddula. *Spectral studies on AlH, BH, CS, CUH, ASO and CAl.* Andhra U, Waltair.

12. Sharma, Kishore Kumar. *Investigations of second and third order non-linearities in laser materials.* U Delhi.

13. Venkat Reddy, T. *Studies on optical systems with non-symmetric and non-central pupil functions.* OU, Hyderabad.

Chemistry

1. Dash, Sudhansu Bhusan. *Studies in vinyl polymerization initiated by some metal and non-metal ions.* Utkal U, Bhubaneswar.

2. Dubey, Shashi Bhushan. *Role of sulphur and zinc on uptake of nitrogen, phosphorus and potassium and chemical composition in soyabean.* RDV, Jabalpur.

3. Gupta, Sushma. *Synthetic contributions towards some selected phenolic metabolites and chemical investigation of unripe fruits of* **Artocarpus intergrifolia.** U Delhi.

4. Harshvardhan Singh. *Catalysed oxidation of organic compounds.* BKU, Jhansi.

5. Komala Amma, E. *Iodo and base adducts of transition metal complexes.* Bhavnagar U.

6. Nooka Raju, Sarakadam. *Chemical constituents of* **Sterculia urens** *Roxb and* **Pterospermum heyneanum** *Wall.* Andhra U, Waltair.

7. Onkar Singh. *Studies on some metal complexes with organic ligands.* U Jammu.

8. Pal, Sankar Kumar. *Studies on graft copolymerization of vinyl monomers on starch and jute fibre.* U Calcutta.

9. Pathak, Ratna. *Studies on oxidation of polyhydric alcohol and carbohydrates.* RDV, Jabalpur.

10. Joshi, Madhukar Govindrao. *Synthesis in pyrazoles and pyrazolines.* Nagpur U.

11. Safia Begum. *Homogeneous catalysis by metal complexes in solution.* OU, Hyderabad.

12. Satrusallya, Subas Chandra. *Studies on heterocyclic compounds: Synthesis, chromatographic and pesticidal studies of new oxazoles.* Utkal U, Bhubaneswar.

13. Saxena, Rashmi. *Iodometric micro determination of organic acid function.* RDV, Jabalpur.

14. Suryanarayana Raju, G. *Some newer aspects of BHC (HCCH) chemistry with special reference to the byproducts of lindane.* U Mysore.

Earth Sciences

1. Gupta, D.C. *Petrology of volcanic rocks around Mandu District, Dhar (M.P.) with special reference to petrological controls on occurrence and quality of groundwater.* Bhopal U.

2. Hareram, Pasumarti. *Hydrology and hydrochemistry of the coastal aquifer at Visakhapatnam, Andhra Pradesh.* Andhra U, Waltair.

3. Harpaul, Vishnudatt. *Geology and geochemistry of the crystalline rocks of Manikaran area, Kulu District, Himachal Pradesh.* Pb U, Chandigarh.

4. Madan, Subhash Chander. *Certain aspects on simulation and prediction of Indian summer monsoon using fgge data.* IIT, Delhi.

5. Nath, Kotla Jayaprakash. *Geophysical investigations for groundwater in the valley fills of the Halia sub-basin in the granitic terrain, Andhra Pradesh, India.* OU, Hyderabad.

6. Prashra, Karam Chand. *Geology of the Deoban belt in the tons region of Uttar Pradesh and Himachal Pradesh.* Pb U, Chandigarh.

7. Subrahmanya Sarma, Kolluri. *Some studies on suspended particulate pollution and trace metals in the lower layers of Visakhapatnam City atmosphere.* Andhra U, Waltair.

Engineering & Technology

1. Aggarwal, Madhav Krishna. *Thermodynamic evaluation of solid absorbent-refrigerant combinations for solar-powered vapour absorption systems.* U Delhi.

2. Anal, Anil Kumar. *Diffusion studies in porous nickel.* IIT, Bombay.

3. Balakrishnan, M. *A microprogram generating system with emphasis on signal processing architectures.* IIT, Delhi.

4. Bhanu Prasad, Pinnamaneni. *Some aspects of regionalised variable theory with applications to image processing.* Andhra U, Waltair.

5. Bhatti, Terlochan Singh. *Interactive excitation and speed governor control of power systems.* IIT, Delhi.

6. Chadha, Rajesh. *Systems analysis of Indian Steel Industry: A simulation modelling approach.* IIT, Delhi.

7. Gauba, Mahalovya. *Some signal processing techniques for ultrasonic tissue characterisation.* IIT, Delhi.

8. Gopinathan, E. *Digital filtering using amplitude change functions.* IIT, Delhi.

9. Gujral, Gurbinder Singh. *An integrated approach to biomass utilisation: Studies on* **Saccharun munja** *Roxb.* IIT, Delhi.

10. Kumbhar, Babu Krishna. *Studies on transient heat transfer and thermal properties of foods during freezing.* IIT, Delhi.

11. Lall, Arun Kumar. *Optimization studies in viscoelastically damped sandwich beams and plates.* IIT, Delhi.

12. Markandeya Rao, Dasari. *Studies on development of groundwater resources along fracture lineaments.* Andhra U, Waltair.

13. Mudigonda, Konda Subrahmanyam. *Geohydrological studies and digital simulation of two typical aquifers in Andhra Pradesh, India.* OU, Hyderabad.

14. Paramanand Singh. *Characterization of powders.* IIT, Bombay.

15. Ramachandran, P.V. *Simulation and optimization of cooling coils.* IIT, Delhi.

16. Sardesai, Sharad Gajanan. *Recycling of zinc from secondary sources.* IIT, Bombay.

17. Totlani, Manohar Khimandas. *Electrodeposited composite coatings.* IIT, Bombay.

Awadhesh Pratap Singh University

REWA (M.P.)

1. Established :	On 1-7-68 under M.P. Vishwavidyalaya Adhiniyam 22 of 1968
2. (a) Jurisdiction (General)	Revenue Districts of Rewa, Satna Panna, Chhatarpur, Tikamgarh, Sidhi, Shahdol and Authorised by the Govt. of M.P. to affiliate.
(b) Jurisdiction (Special)	All Colleges, schools of M.P. imparting instructions under Prachya Paddhati and to conduct their examinations.
3. (i) Number of affiliated colleges (General)	58 (P.G. Colleges + UG College)
(ii) Number of Sanskrit colleges (Sanskrit)	7
4. Faculties	Arts, Social Sciences, Science, Life Science, Engineering, Medicine, Ayurveda, Law, Commerce, Home Science, Education, and Sanskrit Vidya and Dhenm Vigyan.
5. University Teaching Departments.	Environmental Biology, Business Economics, Physics, Chemistry, Mathematics and Statistics, Ancient Indian History, Culture and Archeology, Psychology, Russian Language.
6. Teaching and Research Facilities Research Degrees given Ph.D., D.Sc. and D. Litt.	No. of research Centres
7. Specialized Research Centre :	Mahakavi Kesheo Anusandhan Kendra

8. The University has started the implementation of point 16 (Adult Education) of Govt. of India 20 Point Programme with the aid of University Grants Commission, New Delhi from July 1984 in all the colleges.

9. The University has established the population clubs in the affiliated colleges to apprise the masses about—The benefits of Family Planning with the aid of University Grants Commission, New Delhi.

10. The University has started the coaching of SC/ST students for Banking and Provincial Civil Services with the aid of Ministry of Home Affairs, Govt. of India, New Delhi.

11. The University has been given the charge of Environmental Planning and Coordination organization M.P. Govt. The Vice-Chancellor is the chairman.

12. The University has established a Environmental Stress and Study Centre at Singrouli with the aid of EPCO Rural Ministry of Housing and Environment, Govt. of M.P., Bhopal.

13. The University has also been sanctioned the scheme of Planning Forum.

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G.B. PANT UNIVERSITY OF AGRICULTURE & TECHNOLOGY

PANTNAGAR (DISTRICT NAINITAL)
U.P. Pin-263145

Employment Notice No. 1/1985

The G.B. Pant University of Agriculture & Technology, Pantnagar (U.P.)-263145 invites applications to man various posts listed below:

APPLICATION FORMS can be obtained from the REGISTRAR by sending a self-addressed Rs. 2/- stamped envelope 23x10 cm. size with the name of post inscribed thereon. Allowances will be at the U.P. Government rates. Services of Government servants or from established institutions are obtainable on deputation. Higher starting salary is permissible in deserving cases.

Completed application forms alongwith attested copies of relevant certificates etc. and application fee of Rs. 10/- (by crossed postal order in favour of Comptroller, G.B. Pant University of Agriculture & Technology, Pantnagar P.O.) should be sent to the Registrar, G.B. Pant University of Agriculture and Technology, U.P.-263145 by April 15, 1985 at the latest. Applications received late or incomplete are liable to be rejected. The number of vacancies may be increased/decreased or withdrawn according to requirements.

In the case of teaching posts, there will be no reservation for the candidates of the Scheduled Castes, and Scheduled Tribes. They shall be called for interview, if they fulfil the minimum qualifications even if they are lower in order of merit and provided other things are found equal, they would be given preference.

Pay Scales

1. Professor/Senior Research Engineer, Agril. Engg. Farm Machinery & Power : Rs. 1500-2500.
2. Associate Professor/Senior Research Officer/Production Economist : Rs. 1200-1900.
3. Assistant Professor/Junior Research Officer : Rs. 700-1600.

I. College of Technology

1. Professor Electrical Engineering (Computer Architecture/Digital Systems/Micro Processors/Computer Systems/Computer Aided Design-(Temporary)-1
2. Professor Electrical Engineering (Communication Engg./Digital Electronics/Microwaves/Electronic Devices/System Engg.)-Temporary-1
3. Professor Mechanical Engineering (Production Engg.)-1
4. Professor Agricultural Engineering (Process & Food Engineering) (Storage Engg./Unit Operations/Post Harvest Systems Engg.) Temporary-2.
5. Professor Agricultural Engineering/Design Engineering, Soil & Water Con. Engg. (Hydrology and Sedimentation)-Temporary-1.
6. Senior Research Engineer Agricultural Engineering; Farm Machinery & Power (Biogas) Temporary-1.
7. Associate Professor Electrical Engineering (In the field of Computer Science)-Temporary-1.
8. Associate Professor Electrical Engineering (In the field of Electronics & Communication Engg. including Digital Electronics, Computers, Opto-electronics, Electronics devices, Microwaves and Medical Electronics)-Temporary-1.
9. Associate Professor Mechanical Engineering (Machine Design/Production/Industrial/Thermal Science)-1.
10. Associate Professor Agricultural Engineering (Soil & Water Conservation Engg.)-1.
11. Associate Professor Agricultural Engineering, Process & Food Engg. (Process Equipment Design/Energy Systems/Milling Technology /By-Product Utilization Engg./Biochemical Engg.)-Temporary-1.
12. Associate Professor Civil Engineering (Hydraulics/Structural Engg./Soil Mech. & Foundation Engg.)-1.
13. Senior Research Officer, Civil Engineering (Water Resources)-Temporary-1.
14. Assistant Professor Electrical Engineering (In the field of Electronics & Comm. Engg. including Digital Electronics, Computers, Opto-electronics, Electronics devices, Microwaves and Medical Electronics)-Temporary-1.
15. Assistant Professor Electrical Engineering (In the field of Computer Science and Engg.)-2 Temporary.
16. Assistant Professor Mechanical Engineering (Machine Design/Thermal Engg./Production Engg.)-4 (including 1 Temporary).
17. Junior Research Officer, Agricultural Engineering-Soil & Water Con. Engg. (Hydrology & Sedimentation)-Temporary-1.

1. Professor/Senior Research Engineer, F.&P. (Biogas)-(Posts 1-6) :

Qualifications : Essential : (1) Good Master's degree/doctorate degree in the appropriate field with minimum of 10 years distinguished experience in teaching/research in an institution of University standard, (2) B.Sc. degree in Engineering/Technology. **Desirable :** (1) Doctorate degree in the subject: (2) Professional/Scientific work of outstanding merit; (3) Specialization in one or more specialised fields with experience in guiding P.G. Research.

2. **Associate Professor/S.R.O. :** (Posts 7-13) :

Qualifications : Essential : Good Master's degree in the appropriate field with 5 years experience in teaching/research/extension in an institution of University standard (2) B.Sc. degree in Engineering/Technology; **Desirable:** (1) Specialised knowledge in one or more specialised fields with outstanding teaching/research experience; (2) Doctorate degree or published work of standard merit.

5. Assistant Professor/J.R.O. : (Posts 14-17) :

Qualifications : Essential : (1) Good Master's degree in appropriate field; (2) B.Sc. degree in Engineering/Technology. **Desirable :** (1) Two years teaching/research/Industrial experience in an institution of University/establishment of repute; (2) Doctorate degree or published work of standard merit. Relaxable in case where candidate with M.Tech./M.E. is not available or not found suitable, the essential qualification shall be first class engineering graduate. Such appointee shall have to acquire. M.Tech/M.E. degree within a period of five years failing which he shall not be entitled to any further increments. However, as soon as, the incumbent acquires M.Tech./M.E. degree he shall be entitled to the annual increment thereafter.

II- College of Agriculture

1. Professor Agricultural Journalism-cum-Chief Editor-1.
2. Associate Professor Agricultural Communication-1.
3. Associate Professor Food Science-1
4. Production Economist-Temporary-1
5. Assistant Professor Agricultural Journalism-cum-Editor Hindi Publication-1.
6. Assistant Professor Agricultural Journalism-Editor English Publication-1.
7. Assistant Professor Agricultural Communication-2.
8. Assistant Professor Agricultural Economics-3.
9. Assistant Professor Animal Nutrition-Temporary-1.
10. Junior Research Officer Animal Nutrition-Temporary-1.
11. Junior Research Officer, Agricultural & Resource Economics-Temporary-1.

1. Professor (Post No. 1) :

Qualifications : Essential : Master's degree in Agril. Journalism/Journalism/Agril. Communication/Communication with 7 years of professional experience of active journalism . OR Master's degree in any subject with 10 years of professional experience of active journalism in a reputed newspaper or journal or radio or television or translation and publication. Out of the total experience, at least 3 years must be as teaching experience. **Desirable** : (1) Experience of Agricultural/Developmental Journalism; (2) Teaching/research experience, in the field of Agricultural Journalism; (3) Ph.D. degree in any branch of the above mentioned subject; (4) Working knowledge of Hindi.

2. Associate Professor : (Post No. 2) : **Qualifications : Essential** : Preferably Master's degree in Agril. Communication. Otherwise Master's degree in Marketing Management or Agricultural Extension with 5 years of teaching, research or field work supported by published work in reputed journals and/or books in relation to (1) Mass Communication; (2) Agricultural Journalism; (3) Instructional Technology; (4) Traditional/Folk Media; (5) Oral/Speech Communication; (6) Inter-personal Communication.

Desirable : Ph.D. in any of the above mentioned subjects preferably in communication with experience mentioned above.

3. Associate Professor: (Post No. 3): **Qualifications : Essential** : (1) Doctorate degree in the subject concerned : (2) Five years teaching/research/extension experience.

Desirable : Experience of initiating and guiding P.G. research; (2) Three years teaching experience.

4. Production Economist (Post No. 4): **Qualifications : Essential** : Ph.D. in Agricultural Economics preferably with specialisation in Production Economics: (2) Five years experience of teaching or research.

5. Assistant Professor: (Post No. 5): **Qualifications : Essential** : Master's degree in Agril. Journalism/Journalism/ Agril. Communication preferably with two years experience. OR Master's degree in any subject with 5 years of professional experience of active journalism in a reputed Hindi language newspaper or journal or radio or television or translation and publication. **Desirable** : Working knowledge of English; (2) Ph.D. in any of the above subjects.

6. Assistant Professor : (Post No. 6) : **Qualifications : Essential** : Master's degree in Agril. Journalism /Journalism/ Agril. Communication preferably with two years experience. OR Master's degree in any subject with 5 years professional experience of active journalism in a reputed English language journal or newspaper or radio or television or translation and publication. **Desirable** : Working knowledge of Hindi : (2) Ph.D. in any of the above subjects.

7. Assistant Professor : (Post No. 7): **Qualifications : Essential** : Preferably Master's degree in Agricultural Communication, otherwise degree in Marketing Management or Agricultural Extension. **Desirable** : Two years teaching, research or field experience in techniques of Communication.

8. Assistant Professor/Junior Research Officer : (Posts 8-11) :

Qualifications : Essential : (1) Doctorate degree in the subject concerned : (2) Two years teaching/research/ extension experience.

(Note : Ph.D. will be taken as equivalent to two years experience).

Note for posts No. 2 and 7 : Candidates having Master's and/or Ph.D. degree in Communication/Journalism or equivalent qualifications shall also be eligible.

III-College of Veterinary Science

1. Associate Professor, Histology-1. **Qualifications: Essential** : (1) High second class Master's degree or equivalent in the subject concerned or in the related field with B.V.Sc. & A.H. degree; (2) Five years experience of teaching degree classes/research as evidenced by publications/professional experience in the subject ; (3) Ability to conduct and guide research.

Desirable : (1) Ph.D. degree in the subject concerned; (2) Experience of P.G. teaching.

IV-College of Home Science

1. Professor, Child Development-1.
2. Professor, Clothing and Textiles-1.
3. Senior Research Officer, Farm & Home Management-1 for ICAR Research Project (Temporary but likely to continue).
4. Assistant Professor, Home Science Extension Education-1.
5. Assistant Professor, Child Development-12.
6. Assistant Professor, Clothing and Textiles-1.

1. Professor (Posts No. 1-2) :

Qualifications : Essential: High Second Class Master's degree in Home Science or in related field in the subject concerned with first class Bachelor's degree in Home Science OR First Class Master's degree in Home Science or in related field in the subject concerned with high second class Bachelor's degree in Home Science, (2) Ten years teaching/research/extension/experience to be supported by Publications in professional Journals, (3) Ability to conduct and guide research, **Desirable** : (1) Doctorate degree in the subject concerned, (2) Experience in administration.

2. Senior Research Officer : (Post No. 3) :

Qualifications : Essential : (1) High Second Class Master's degree in Home Science or in related field in the subject concerned with first class Bachelor's degree in Home Science OR First class Master's degree in Home Science or in related field in the subject concerned with second class Bachelor's degree in Home Science. (2) Five years' teaching/ research/extension experience (Research experience to be supported by publications in Professional Journals), (3) Ability to conduct and guide research.

Desirable : (1) Doctorate degree in the subject concerned (2) Experience of post-graduate teaching.

3. Assistant Professor : (Posts No. 4-6) :

Qualifications : Essential : Consistently good academic record with high second class Bachelor's degree in Home Science and good second class Master's degree in Home Science in the subject concerned or in a related field.

Desirable: (1) Two years teaching, research and extension experience in the subject; (2) Ph.D. in the subject.

V. Directorate of Extension

1. Associate Director (Extension Training)-1 Scale : Rs. 1200-1900 :

Qualifications : Essential : Ph.D. in Extension/Agronomy/Soil Science/Plant Pathology/Agril. Economics/Entomology (2) Five years experience of teaching/research/extension.

Desirable : (1) Experience of initiating and guiding P.G. research; (2) Three years teaching experience.

2. Assistant Professor, Agril. Extension : 1

Qualifications : Essential : Doctorate degree in the subject concerned.

OR

Two years experience after M.Sc. in good second class in the subject concerned.

VI. Krishi Vigyan Kendra, Ranichauri

1. Training Associate, Home Science (Temporary)-1 Scale Rs. : 700-1600 :

Qualifications: Essential: Consistently good academic record with high second class Bachelor's degree in Home Science and Master's degree in any branch of Home Science or in a related field. **Desirable** : (1) Two years teaching, research and extension experience in the subject ; (2) Ph.D. in the subject.

VII. Directorate of Research

(A) National Agricultural Research Programme, Daurala

1. Senior Research Officers-5 posts (Temporary) : (i) Soil Chemistry; (ii) Plant Pathology; (iii) Entomology; (iv) Agril. Extension; (v) Animal Husbandry.

Qualifications: Essential: (1) Doctorate degree in the subject concerned; (2) 5 years teaching/research/extension experience. **Desirable**: (1) Experience of initiating and guiding P.G. research, (2) 3 years teaching experience.

Note

Post No. (iv) S.R.O. Agril. Extension. Doctorate degree should be in any branch of Agriculture.

Post No. (v) S.R.O. Animal Husbandry - Doctorate degree should be in Animal Nutrition/Animal Breeding.

2. Junior Research Officer, Veterinary Medicine : 1 (Temporary) -

Qualifications: Essential : High second class Master's degree in Veterinary Medicine or equivalent in the subject concerned or in the related field with B.V.Sc. & A.H. degree.

Desirable : (1) Doctorate degree in the subject concerned; (2) Two years teaching, research or professional experience in the subject.

3. Junior Research Officer : Animal Nutrition-1 (Temporary).

Qualifications : Essential : (1) Doctorate degree in the subject concerned : (2) Two years teaching/research/extension experience.

(**Note** : Ph.D. will be taken as equivalent to two years experience)

4. Junior Research Officer, Agricultural Engineering : 1(Temporary)

Qualifications : Essential : (1) Good Master's degree in the appropriate field; (2) B.Sc. degree in Engineering/Technology.

Desirable : Two years teaching/research/industrial experience in an institution of University standard or establishment of repute; (2) Doctorate degree or published work of standard merit. Relaxable in case where candidate with M.Tech./M.E. is not available or not found suitable, the essential qualifications shall be first class engineering graduate. Such appointee shall have to acquire M.Tech/M.E. degree within a period of five years failing which he shall not be entitled to any further increments. However, as soon as the incumbent acquires M.Tech/M.E. degree he shall be entitled to the annual increment thereafter.

(b) National Agricultural Research Programme, Ranichauri

1. Senior Research Officer-9 posts (Temporary) : (i) Vegetable Breeding (ii) Agronomy (iii) Soil Science (iv) Plant Breeding (v) Animal Nutrition (vi) Livestock Management ; (vii) Plant Pathology (viii) Entomology; (ix) Agricultural Economics.

Qualifications : Essential : (1) Doctorate degree in the subject concerned; (2) Five years teaching/research/extension experience

Desirable : (1) Experience of initiating and guiding P.G. research; (2) Three years teaching experience.

Note : Post No. (vi) S.R.O. Livestock Management : Doctorate degree should be in Animal Nutrition/Animal Breeding.

2. Senior Research Officer, Agrostology : 1 (Temporary)

Qualifications : Essential : Doctorate degree in Agrostology/Agronomy; (2) Five years teaching/research/extension experience.

Desirable : Experience of initiating and guiding P.G. research; (2) Three years teaching experience.

3. Senior Research Officer, Silviculture; 1 (Temporary).

Qualifications : Essential : (1) Master's degree in Forestry or Associate from Indian Forest College, Dehra Dun with 5 years experience of teaching/research/extension in Forestry OR (2) Ph.D. in Forestry or any allied subjects (Horticulture/Agricultural Botany/Botany Agronomy/Forest Ecology/Soil Science) with 3 years experience of planning and implementation of forest programme.

4. Junior Research Officer-2 posts (Temporary) : (i) Vegetable Breeding; (ii) Horticulture.

Qualifications : Essential : (1) Doctorate degree in the subject concerned; (2) Two years teaching/research/extension experience. (Note : Ph.D. will be taken as equivalent to two years experience).

5. Junior Research Officer-2 posts (Temporary) : (i) Soil and Water Conservation Engineering (ii) Farm Machinery.

Qualifications : Essential : (1) Good Master's degree in appropriate field; (2) B.Sc. degree in Engineering/Technology. **Desirable** : Two years teaching/research/industrial experience in an institution of University standard or establishment of repute ; (2) Doctorate degree or published work of standard merit. Relaxable in case where candidate with M.Tech./M.E. is not available or not found suitable ; the essential qualifications shall be first class engineering graduate such appointee shall have to acquire M.Tech/M.E. degree within a period of five years failing which he shall not be entitled to any further increments. However, as soon as the incumbent acquires M.Tech./M.E. degree he shall be entitled to annual increments thereafter.

6. Junior Research Officer, Veterinary Science : 1 (Temporary)

Qualifications : Essential : High second class Master's degree in Veterinary Medicine or equivalent in the subject concerned or in the related field with B.V.Sc. & A.H. degree.

Desirable : (1) Doctorate degree in the subject concerned; (2) Two years teaching; research or professional experience in the subject.

(c) National Agricultural Research Programme, Majhera

1. Senior Research Officer: - Plant Breeding-1 (Temporary)

Qualifications: Essential: Doctorate degree in the subject concerned; (2) Five years teaching/research/extension experience.

Desirable : (1) Experience of initiating and guiding P.G. research; (2) Three years teaching experience.

2. Junior Research Officer-5 posts (Temporary) : (i) Plant Breeding (ii) Agronomy (iii) Entomology (iv) Soil Science (v) Vegetable Crops.

Qualifications : Essential : (1) Doctorate degree in the subject concerned; (2) Two years teaching/research/extension experience.

(**Note** : Ph.D. will be taken as equivalent to two years experience.)

(d) National Agricultural Research Programme, Nagina

1. Chief Scientist Plant Breeding/Agronomy : Scale : Rs. 1500-2500-1 (Temporary).

Qualifications : Essential : (1) Doctorate degree in the subject concerned ; (2) Ten years teaching/research/extension experience.

Desirable : Experience of initiating and guiding research at P.G. level; (2) Five years teaching experience; (3) Administrative experience.

2. Senior Research Officer-3 posts (Temporary) : (i) Plant Pathology (ii) Agronomy (iii) Soil Science.

Qualifications : Essential : (1) Doctorate degree in the subject concerned ; (2) Five years teaching/research/extension experience. **Desirable** : (1) Experience of initiating and guiding P.G. research (2) Three years teaching experience.

3. Junior Research Officer, Entomology : 1 (Temporary)

Qualifications : Essential : Doctorate degree in the subject concerned; (ii) Two years teaching, research, extension experience (Note : Ph.D. will be taken as equivalent to two years experience).

4. Junior Research Officer, Agril. Extension : 1 (Temporary)

Qualifications : Essential : Doctorate degree in the subject concerned : OR Two years experience after M.Sc. in good second class in the subject concerned.

5. Junior Research Officer, Microbiology : 1 (Temporary)

Qualifications : Essential : (1) A Doctorate degree (2) Consistently good academic record with first or high second class (B in the seven point scale) Master's degree in the relevant subject or an equivalent degree of a foreign university. Having regard to the need for developing interdisciplinary programmes, the degree in (1) and (2) above may be in the relevant subject.

Provided that if the selection committee is of the view that the research work of the candidate as evident either from his thesis or from his published work is of very high standard it may relax any of the qualifications prescribed in (2) above.

Provided further that if a candidate possessing a Doctor's degree is not available or is not considered suitable, person possessing consistently good academic record (weightage being given to M.Phil. or equivalent degree or research work of quality) may be appointed provided he has one research for atleast two years or has practical experience in a Research Laboratory/Organisation on the condition that he will obtain a Doctor's degree within five years of his appointment, failing which he will not be able to earn future increments until he fulfils the requirements.

Explanation : (1) Candidate for being eligible for recruitment to the post of Assistant Professor must have a first or high second class (B in the seven point scale) at the Master's level and for determining consistently good academic record, average 50-55% or (B in the seven point scale) may be expected at the two examinations prior to Master's examination.

VIII-General

1. Transport Officer : 1 Scale Rs. 850-1720.

Qualifications : Essential : Bachelor's degree in Mechanical Engineering with two years experience in the maintenance, repair and operations of vehicles in any Transport Organisation of repute. Or Diploma in Mechanical Engineering or Automobile Engineering with five years experience in maintenance, repair and operations of vehicles in any Transport Organisation of repute.

2. Radio & T.V. Engineer : 1 Scale : Rs. 850-1720.

Qualifications : Essential : B.E. or B.Tech. in Electronics/Electrical or equivalent with two years experience in repairs, maintenance/Research and development in Electronic equipments preferably Radio equipments/Audiovisual equipments/Television equipments.

OR

Diploma in Electronics/Electrical or equivalent with seven years experience in the repairs, maintenance/Research, and development in Electronic equipments preferably Radio equipments/Audiovisual equipments/Television equipments.

Those who are working in institutions like All India Radio/Doordarshan/Space Application Centre/NCERT/FTII and like and fulfil above requirements may be taken on deputation terms.

The duties of the Radio & T.V. Engineer will be repair, maintenance and operation of Radio and T.V. Studio, Control Room equipment and other Audio and Video equipments.

O.S. Misra
REGISTRAR

UNIVERSITY OF KERALA

TRIVANDRUM

No. Ad. DII.2.2255/85

NOTIFICATION

Applications are invited from qualified candidates for appointment to the post of Lecturer in the Department of Chemistry.

Application form and details regarding qualifications, age, scale of pay, etc. can be had from the University Office, Trivandrum on production of a challan receipt for Rs. 2/- remitted in any branch of the State Bank of Travancore specifying the purpose of remittance and the post for which application forms are required or on payment of the amount by crossed postal order payable to the Finance Officer, University of Kerala, Trivandrum (for persons outside the State only). Request for application forms should be addressed to "The Deputy Registrar (Administration), University of Kerala, Trivandrum-34".

The last date for receipt of applications is **25-3-1985.**

S.K. Rajagopal
REGISTRAR

SREE CHITRA TIRUNAL INSTITUTE FOR MEDICAL SCIENCES AND TECHNOLOGY

TRIVANDRUM-11.

(An Autonomous Institute of National Importance under the Government of India)

REQUIRES

1. Professor of Anaesthesia
2. Professor of Cardiology
3. Professor of Cardiothoracic Surgery
4. Professor of Neuro Surgery
5. Professor of Radiology
6. Associate Professor of Neurology
7. Assistant Professor of Anaesthesia
8. Lecturer in Neurology
9. Lecturer in Neuro Surgery
10. Lecturer in Cardiology
11. Lecturer in Cardiac Surgery
12. Lecturer in Anaesthesia
13. Lecturer in Radiology
14. Scientist 'E'
15. Scientist 'C'
16. Scientist 'B'
17. Assistant Engineer (Electrical)

Scale of Pay : (with approximate total emoluments in the brackets)

Post 1 to 5 : Rs. 2500-100-3200 : (Rs. 4650+HRA)

Post 6 : Rs. 2100-75-2625 : (Rs. 3902+HRA)

Post 7 : Rs. 1800-75-2100-100-2400 : (Rs. 3556+HRA)

Post 8 to 13 : Rs. 1500-60-2040 : (Rs. 2840+HRA)

Post 14 : Rs. 1600-60-2020 - (Rs. 3000 +HRA)

Post 15 : Rs. 900-50-1600 : (Rs. 2177+HRA)

Post 16 & 17 : Rs. 700-40-1100-50-1300 : (Rs. 1728.50+HRA)

Maximum age limit as on 31-3-1985.

Post 1 to 5 : 50 years.
Post 6 : 45 years.
Post 7 : 40 years.
Post 8 to 13 : 35 years.
Post 14 & 15 : 40 years.
Post 16 & 17 : 35 years.

Qualification & Experience

Post 1

(a) A Medical qualification included in the First or Second Schedule or Part II of the Third Schedule to the Indian Medical Council Act, 1956 (Persons possessing qualifications included in Part II of the Third Schedule should also fulfil the conditions specified in section 13(3) of the Act.

(b) M.D./FFARCS/FRCS(C) / American Board Certification / Diploma National Board in the speciality.

(c) Teaching and/or research experience of not less than 10 years after prescribed post-graduate qualification.

Desirable : Experience in administration of Departmental work and research programmes.

Post 2.

(a) Same as for Post 1.

(b) DM/FRCP (C)/American Board Certification/Diploma National Board in the speciality.

(c) Same as for Post 1.

Post 3.

(a) Same as for Post 1.
(b) M.Ch./FRCS (C)/American Board Certification/Diploma National Board in the speciality.
(c) Same as for Post 1.

Post 4.

(a) Same as for Post 1.
(b) M.Ch./FRCS (C)/American Board Certification/Diploma National Board in the speciality.
(c) Same as for Post 1.

Post 5.

(a) Same as for Post 1.
(b) MD/FRCP(C)/FFRCS / American Board Certification/Diploma National Board in the speciality
(c) Same as for Post 1.

Post. 6.

(a) Same as for Post 1.
(b) DM/FRCP(C)/American Board Certification/Diploma National Board in the speciality.
(c) Teaching and/or research experience of not less than 5 years in the subject after prescribed postgraduate qualification.

Post 7.

(a) Same as for Post 1.
(b) MD/FFARCS/FRCS(C)/American Board Certification/Diploma National Board in the speciality.
(c) Teaching and/or research experience of not less than 2 years in the subject after prescribed postgraduate qualification.

Post 8.

(a) Same as for Post 1.
(b) DM/FRCP(C)/American Board Certification/Diploma National Board in the speciality.

Post 9.

(a) Same as for Post 1.
(b) M.Ch./FRCS(C)/American Board Certification/Diploma National Board in the speciality.

Post 10.

(a) Same as for Post 1.

(d) DM/FRCP/(C)/American Board Certification/Diploma National Board in the speciality.

Post 11.

(a) Same as for post 1.

(b) M.Ch./FRCS(C)/American Board Certification/Diploma National Board in the speciality.

Post 12

(a) Same as for Post 1.

(b) MD/FFARCS/FRCS (C)/American Board certification / Diploma National Board in the speciality.

Post 13.

(a) Same as for Post 1.

(b) MD/FRCP(C)/FFRCS/American Board Certification//Diploma National Board in the speciality.

Post 14.

Sc.D./D.Sc./Ph.D. in Biochemistry. 5 years post doctoral research and/or teaching experience. Total of 7 years experience in biochemistry.

Job requirements : This is a Senior position which will require the candidate to supervise a thrombosis research programme.

Post 15.

First Class graduates in Physics/Maths with a minimum of 4 years experience in actual programming, designing and implementing systems independently. Experience in Multiterminal, Multiprogrammes and Mini Computer preferred.

Post 16

(a) B.E./B.Sc. (Engg.)/B.Tech. in Mechanical/Electrical from a recognised University.

Job requirements : To assist in development of Biomedical devices.

(b) B.Sc. in Chem. Engineering/B.Tech. in Polymer/Plastic technology.

Job requirement : To work in polymer processing and technology.

(c) B.Sc. Engineering/B.Tech. in Metallurgy/Material Science/Mechanical Engineering.

Job requirement : To assist in development of metals/ceramics for medical use.

Post 17.

B.E./B.Sc. (Engg.) in Electrical Engg. with 5 years experience in the field of which 2 years should be in a supervisory post. The job requires supervision of electrical and civil works of the Institute.

Age, qualification and experience etc., relaxable in exceptional cases.

Applications in plain paper with biodata of the candidates and attested copies of certificates of educational and professional qualification, date of birth, experience etc., should reach the undersigned on or before **5-4-1985.**

DIRECTOR

JADAVPUR UNIVERSITY

CALCUTTA-32

Dated March 1, 1985

Employment Notification No. A2/C/5/85

The University invites applications in the prescribed form for the following posts:

1. **Lecturer**

(a) Production Engineering—Two posts

(b) Metallurgical Engineering—One post.

Qualifications

Essential

(i) Master's degree in appropriate field in Engineering/Technology;

(ii) Good academic record with a Bachelor's degree in Engineering/Technology. First Class at Bachelor's degree and/or Master's degree level;

(iii) One year's relevant professional experience outside academic/research institutions.

Having regard to the requirements of emerging fields of Engineering and of developing interdisciplinary programmes, the requirements of Engineering/Technology degrees may be waived in the cases of otherwise well qualified candidates.

Provided further that if a candidate does not possess professional experience or a person possessing such experience is not found suitable, the person appointed will be required to obtain desired professional experience within a period of eight years of his appointment failing which he will not be able to earn future increments, until he fulfils these requirements.

Wherever candidates with M.Tech. M.E. qualifications are not available or M.Tech./M.E. candidates are not found suitable for appointment, the essential qualification may be relaxed and the institution may appoint First Class Engineering Graduates against the post of Lecturers. Such relaxation will, however, be subject to the condition that the candidates concerned shall have to obtain the M.Tech./M.E. degree within a period of five years. Those candidates who fail to obtain the M. Tech./M.E. degree within the stipulated period of five years shall not be entitled for drawing their increments due unless they acquire the prescribed qualification.

Definition of the term 'Good academic record' for the posts of Lecturer.

(i) A candidate holding a Ph.D. degree should possess at least a second class Master's degree;

(ii) A candidate without a Ph.D. degree should possess a high second class Master's degree; or

(iii) A candidate not possessing Ph.D. degree but possessing second class Master's degree should have obtained first class in the Bachelor's degree.

Desirable

For post 1(a)

(i) Initiative and creative approach for original research.

(ii) Corporate activities and membership of learned societies.

For post 1(b)

(i) Teaching experience in Engineering College of Degree standard.

(ii) Experience of teaching and investigation in Mineral Beneficiation & Engineering.

(iii) Professional experience.

Specialization

For post 1(a)

(i) Manufacturing System (non-traditional)—ECM, EDM, USM etc.

(ii) Machine Tool Design

(iii) Micro-Computer applications in Production systems.

(iv) Industrial Engineering & Management Science.

(v) Ergonomics and Human Engineering.

(vi) Systems Engineering.

Note:

The candidates with Post-Graduate degree in Science/Technology with specialisation in Ergonomics/Human Engineering are also eligible to apply for specialisation (v) as above.
For post 1(b)

Extractive Metallurgy/Mineral Beneficiation and Engineering.

Scale of pay

Rs. 700-40-1100-50-1600/-.

LAST DATE OF RECEIVING APPLICATION IS **MARCH 29, 1985.**

Application forms are obtainable from the University Office during working hours on payment of Rs. 2/- or by post on payment of Rs. 2/-+Re. 1/- as postal charges. No travelling allowance is admissible to candidates called for interview. Higher initial salary may be given to really deserving candidates. Those who are in employment should submit their applications through proper channel. Candidates are requested to submit separate sets (each set consisting of 8 copies) of applications in prescribed form indicating specialization where they intend to apply for more than one post. Choice of Appointment Committee will not necessarily be confined to applicants only. Canvassing in any form will disqualify a candidate.

REGISTRAR

SARDAR PATEL UNIVERSITY

VALLABH VIDYANAGAR 388120
GUJARAT STATE

Notification No. EST/7 (1984-85)

Applications are invited in the prescribed forms available from the University Office on payment of Rs. 5/- in Cash or by Indian Postal Order for the following posts so as to reach the undersigned on or before **10-4-1985.**

1. Professor each in :
   (1) History
   (2) Animal Science (with Basic M.Sc. degree in Zoology)

Scale of Pay : Rs. 1500-60-1800-100-2000-125/2-1500

2. Reader each in:
   (1) Chemistry (Industrial)
   (2) Chemistry (Analytical /Polymer)
   (3) Hindi (Drama & Dramaturgy)
   (4) English

Scale of Pay : Rs. 1200-50-1300-60-1600-Assessment-60-1900.

3. Lecturer each in:
   (1) Chemistry (Inorganic)
   (2) M.B. Patel College of Education (Special Methods-Sanskrit, Hindi or Gujatati and preferably speech skills).

Scale of Pay : Rs. 700-40-1100-50-1300-Assessment-50-1600.

4. Technician in Post-graduate Department of Biosciences (Two Posts)

Scale of Pay: Rs. 700-40-1020-EB-45-1200-50-1300-EB-50-1500.

5. Garden Supervisor-cum-Herbarium

Scale of Pay : Rs. 425-15-500-EB-15-560-20-600-EB-20-700.

6. Technician for Library

Scale of Pay : Rs. 380-12-440-15-470-EB-15-560-EB-20-600.

7. Research Associate in Hindi (Two Posts) (Temporary)
   1. Language & Linguistics
   2. Drama & Dramaturgy.
   Rs. 1300/- fixed.

Scale of Pay : Rs. 1300/- fixed.

8. **For University Computer Centre**
   1. Director-Computer Centre : Rs. 1500-60-1800-100-2000.
   2. System Engineer : Rs. 1100-50-1300-EB-60-1600.
   3. System Analyst : Rs. 1100-50-1300-EB-60-1600
   4. Programmer : Rs. 700-40-980-EB-40-1100-50-1200-EB-50-1300
   5. Sr. Computer Operator : Rs. 550-25-750-EB-30-900.
   6. Jr. Computer Operator : Rs. 425-15-500-EB-15-560-20-600-EB-20-700.
   7. Job Receptionist : Rs. 330-10-380 EB-12-440-EB-15-560.
   8. Tape Disc Librarian : Rs. 330-10-380-EB-12-440-EB-15-560.
   9. Punch Operator : Rs. 260-6-308-EB-6-326-8-350-EB-8-390-10-400.

Details of the prescribed qualifications etc. will be supplied alongwith the Application Forms.

All the posts except at Sr. No. 7 carry benefits of Dearness Allowance, Provident Fund, Gratuity and Pension Scheme as per University Rules.

Preference will be given to the qualified candidates belonging to Scheduled Castes/Scheduled Tribes, Socially and Educationally and/or Economically backward Class. Candidates belonging to these castes must attach a Certificate from appropriate authority.

S.S. Patel
REGISTRAR

SHREEMATI NATHIBAI DAMODAR THACKERSEY WOMEN'S UNIVERSITY

SHREEMATI NATHIBAI DAMODAR THACKERSEY WOMEN'S UNIVERSITY, 1, Nathibai Thackersey Road, Bombay-400020, invites applications before **April 10, 1985** in the prescribed forms available at the University Office, on payment of Rs. 5/- in cash or by Indian Postal Order for the following posts to be filled in at the University Departments and its conducted institutions at Bombay and Pune:

	No. of Posts	Media of Teaching
A. Department of Post-Graduate Studies and Research, SNDT Women's University, Bombay		
1. Professor of Economics	ONE	ENG. & MAR./GUJ
2. Reader in Sociology	ONE	ENG.& MAR.
3. Reader in Politics	ONE	ENG.& MAR./GUJ.
4. Lecturer in Politics	ONE	ENG.& MAR./GUJ.
5. Lecturer in History	ONE	ENG.& MAR.
B. S.N.D.T. Arts & Smt. Champaben College of Commerce & Economics for Women, Bombay		
6. Professor/Reader in Commerce—for post-graduate department (with specialisation in Accounts' Group, namely, "costing/labour/statistics/banking")	ONE	ENGLISH
7. Lecturer in Commerce (M.Com. with statistics-special. Preferably to teach Industrial Management)	ONE	ENGLISH
8. Lecturer in Political Science	ONE	ENG.& MAR.
9. Lecturer in Geography	ONE	ENG.& GUJ.
10. Lecturer in History	TWO	ENG.& MAR.
C. S.N.D.T. Arts & Commerce College for Women, Pune		
11. Reader in Economics	ONE	ENG.& MAR.
12. Lecturer in Economics for post-graduate department)	ONE	ENG.& MAR.
13. Lecturer in Economics	ONE	ENG.& MAR.
D. Sir Vithaldas Thackersey College of Home Science, Bombay		
14. Professor of Child Development	ONE	ENGLISH
15. Reader in Textile & Clothing	ONE	ENGLISH
E. S.N.D.T. College of Home Science, Pune		
16. Reader in Science Education/Mass Media for Children	ONE	ENGLISH
17. Reader in any area of Home Science	ONE	ENGLISH
18. Technician	ONE	—
19. Laboratory Attendant	ONE	—
F. Leelabai Thackersey College of Nursing, Bombay		
20. Reader in Nursing	ONE	ENGLISH
G. P.V.D.T. College of Education for Women, Bombay		
21. Reader in Education/Sociology/Psychology/Economics (Interdisciplinary Research)	ONE	ENG.& MAR.
22. Lecturer in Education (Research Department)	ONE	ENG.& GUJ.
H. C.U. Shah College of Pharmacy, Bombay		
23. Principal—Professor	ONE	ENGLISH
I. S.H.P.T. School of Library Science, Bombay		
24. Lecturer in Library Science	ONE (Temp.)	ENGLISH
J. S.N.D.T. Women's University Central Library, Bombay		
25. Deputy Librarian	ONE	(Details given in note)
26. Jr. Library Assistant (Re Advertised-II)	THREE (2 Reserved)	-do-
27. Technician	ONE	-do-
28. Library Attendant	ONE	-do-
K. S.N.D.T. Women's University Branch Library, Sir Vithaldas Vidyavihar, Juhu, Bombay		
29. Sr. Library Assistant	ONE	-do-
30. Jr. Library Assistant	ONE	-do-
31. Library Attendant	ONE	-do-
L. S.N.D.T. Women's University Branch Library, Maharshi Karve Vidyavihar, Pune		
32. Deputy Librarian	ONE	-do-
33. Library Attendant	ONE	-do -

Minimum qualifications, salary scales, etc. for the posts of teachers are as per approved U.G.C. scales and qualifications. Applications of scheduled castes/tribes/other nomadic tribes, etc. will be considered as per Government directives. For posts marked 'Reserved' and advertised upto third time, applications from only reserved categories will be entertained, namely, SC/ST/ONT. The University reserves the right to reserve other posts as required. More details regarding qualifications, experience, etc. will be available with application forms, which should be collected.

Smt. K.H. Bhansali
REGISTRAR

INDIAN INSTITUTE OF TECHNOLOGY, BOMBAY

P.O. I.I.T. POWAI, BOMBAY-400076

Advertisement No. B-43/85

Applications are invited for the following permanent posts in the Department of Computer Science and Engineering of this Institute, in the prescribed form obtainable free of charge from the Registrar, Indian Institute of Technology, P.O. IIT, Powai, Bombay-400076 on request accompanied by self-addressed envelope (25cm 10cm). Applicants should give an account of their academic and professional record and list of research publications. Persons employed in Government/Semi-Government Organizations or Educational Institutions should apply through proper channel. Indian candidates abroad may apply on plain paper in duplicate. The posts carry allowances such as D.A., C.C.A., H.R.A. as per rules of the Institute which at present correspond to those admissible to the Central Government employees stationed at Bombay. Depending on qualifications and experience, higher salary may be offered. Completed applications should reach the Registrar, I.I.T. Powai, Bombay-400076 **on or before 15th April, 1985.**

Some posts of Lecturer are reserved for the candidates belonging to SC/ST community.

In addition to the existing facilities such as the Third Generation Computer EC-1030, the Institute will soon be acquiring a Fourth Generation Main Frame Computer with CAD/CAM and Image Processing facilities. The Department has microprocessor based interactive and colour graphic systems besides several microprocessor kits and other equipments. The Department is about to acquire a three node local area network with 16/32 bit computers supporting several interactive terminals with colour graphic facilities.

1. **Assistant Professor** : Scale of Pay Rs. 1200-50-1300-60-1900.
2. **Lecturer** : Scale of Pay: Rs. 700-40-1100-50-1600.

Total emoluments on the minimum of the scale excluding H.R.A.

On basic pay of Rs. 1200/- : Rs. 2,615/-
On basic pay of Rs.700/- : Rs. 1,778.35

Qualifications & Experience

No. of vacancies : Assistant Professor/Lecturer : 3

Assistant Professor

Consistently good academic record with a Doctorate degree in the relevant field. About 5 years experience in teaching and/or research and development.

Candidates not possessing Ph.D. may also be considered if they have to their credit equivalent published research work or design/development work of high standard in an Institution or in an Industry.

Lecturer

Master's degree in appropriate field in engineering/technology.

One year's relevant professional experience.

Areas of Specialisation: (In one or more of the following)

VLSI Design, Digital Systems and Microprocessors, DBMS, Speech recognition and synthesis, Picture Processing, Computer Networks, Software Engineering, Performance Evaluation, Computer Graphics, CAD/CAM Algorithms and Methodology.

Indian Institute of Technology, Bombay

P.O. IIT POWAI, BOMBAY-400 076

Advertisement No. B-55/85

REGISTRAR

Applications in the prescribed form, obtainable on request from the Deputy Registrar (Administration), Indian Institute of Technology, P.O. IIT Powai, Bombay-400 076 and accompanied by a self-addressed envelope (25 cm × 10 cm), are invited for the post of REGISTRAR before 6th April. 1985. Candidates employed in Government, Semi-Government Organizations or Educational Institutions must apply through proper channels.

The scale of pay is Rs. 1500-60-1800-100-2000-125/2-2500 plus other allowances, as admissible under the Institute rules. The total gross emolument on the minimum of the scale (excluding H.R.A.) is Rs. 2,915. Unfurnished residential accommodation free of licence fee is provided in the Campus.

The appointment may be on a contract basis initially for a period of 5 years or on a regular basis with superannuation at the age of 60 years.

(A) JOB DESCRIPTION

The Registrar of the Institute is the Secretary of the Board of Governors and Senate. He has the overall responsibility of the office related to the administration of the Institute, including recruitment, personnel matters, promotion and discipline of staff, and accounts.

(B) QUALIFICATIONS

(1) A good Bachelor's degree in Arts, Science, Commerce, Engineering or Technology of a recognised University.

(2) A Postgraduate degree or Diploma in any of the above fields or in Public Administration/Management of a recognised Institute/University or its equivalent or recognised qualifications as Chartered Accountant/Cost Accountant/SAS Accountant.

(C) EXPERIENCE

A minimum of 15 years of administrative experience preferably in a Government, Educational or research institute or in a commercial organization of national standing. Out of this, at least 8 years should be in a responsible position. The candidates would be expected to have an adequate grasp of financial matters, secretarial experience of statutory bodies and committees, and some familiarity with academic activities and working procedures in higher educational institutions. In the case of candidates with exceptional qualifications, the duration of experience may be relaxed suitably.

(D) DESIRABLE

(1) Teaching and research experience or experience of life on a residential educational campus.

(2) Experience of computer systems for information processing and retrieval.

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Re. 1.00

F.D 52

Shri K.C. Pant, Union Education Minister, inaugurating the Conference of Vice-Chancellors of Universities in Asia and the Pacific Region in New Delhi. Seated on his right and left are Dr. (Mrs.) Madhuri R. Shah, Chairman, UGC and Shri Anand Sarup, Secretary, Ministry of Education respectively.

CLASSIFIED ADVERTISEMENTS

UNIVERSITY OF DELHI

Advt. No. Estab. IV/100/85

Dated the 8th March, 1985

Applications are invited for the following posts in the Unit for Plant Cell and Molecular Biology. The unit will be funded by the Department of Science & Technology, Govt. of India until 15th August, 1988 and will be taken over by the University thereafter. The appointments will be temporary upto 15th August 1988 but are likely to continue.

1. Two Senior Scientists
2. Five Junior Scientists

*3. Four Junior Research Fellows
*4. Two Technical Officers (One for Electronics and another for Refrigeration and Air-Conditioning)
*5. One Senior Scientific-cum-Administrative Assistant.
*6. One Senior Technical Assistant
*7. One Technical Assistant.

Scale of Pay of the posts are:

Senior Scientists : Rs. 1200-50-1300-60-1900.

Junior Scientists : Rs. 700-40-1100-50-1600.

Junior Research Fellows: Rs. 800 p.m. (Rs. 1000/- p.m. for those clearing UGC Tests) fixed.

Technical Officer : Rs. 700-40-900-EB-40-1100-50-1300.

Senior Scientific and Administrative Assistant Rs. 650-30-740-35-810-EB-35-880-40-1000-EB-40-1200.

Senior Technical Assistant : Rs. 550-25-750-EB-30-900.

Technical Assistant : Rs. 425-15-500-EB-15-560-20-700.

All posts except those of Junior Research Fellows, carry D.A., C.C.A. and H.R.A. as admissible under the rules in force in the University from time to time.

Qualifications for

Senior Scientists

Good academic record with atleast Second Class Master's degree in a relevant subject with a doctoral degree or equivalent published work. Evidence of being actively engaged in (i) resaerch, or (ii) innovation in teaching methods or (iii) production of teaching materials.

Five years' experience of teaching in under-graduate/post-graduate classes and/or post-doctoral research work with evidence of published work.

Note

Second Class would mean at least 50% marks in the subject or equivalent grade.

Junior Scientists

(a) A Doctorate's degree or research work of an equally high standard; and

(b) Good academic record with at least second class (C in the seven point scale). Master's degree in a relevant subject from an Indian University or an equivalent degree from a foreign University.

Having regard to the need for developing interdisciplinary programmes, the degree in (a) and (b) above may be in relevant subjects.

Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may relax the requirement of "at least Second Class in Master's degree examination" in terms of level achieved at the said examination as prescribed in (b) above.

Provided further that if a candidate possessing a Doctor's degree or equivalent Research work is not available or is not considered suitable, a person possessing a good academic record, (weightage being given to M.Phil. or equivalent degree or research work of quality) may be appointed on the condition that he will have to obtain a Doctor's/M.Phil. degree or give evidence of research of high standard within eight years of his appointment, failing which he will not be able to earn future increments until he fulfils these requirements.

Explanation

1. For determining "good academic record" the following criteria shall be adopted:

(i) A candidate holding a Ph.D./M.Phil degree should possess at least a second class Master's degree; or

(ii) A candidate without a Ph.D./M.Phil degree should possess a High second class Master's degree and second class in the Bachelor's degree; or

(iii) A candidate not possessing Ph.D./M.Phil degree but possessing second class Master's degree should have obtained first class in the Bachelor's degree.

2. Persons having secured at least 55% marks or more shall be deemed to have passed the examination in the high second class.

Junior Research Fellows

M.Sc. in Botany or allied Sciences with high second class.

Technical Officers

Diploma in respective field of specialisation and atleast 10 years technical experience of handling and repairing instruments (in case of T.O. Electronics) or maintenance and repair of air conditioning and refrigeration machines (in case of T.O. Air-conditioning). Experience relaxable in case of candidates with higher qualifications.

Senior Scientific-cum-Administrative Assistant

M.Sc. in Botany with at least 5 years experience of giving both scientific and administrative assistance.

Senior Technical Assistant

B.Sc. with 5 years laboratory experience (experience relaxable in case of M.Sc. candidates).

Technical Assistant

B.Sc. Prior experience desirable.

Special/Desirable Qualifications for

Senior and Junior Scientists

Research experience in the areas of plant cell, tissue culture, genetic engineering or photobiology.

The prescribed application forms can be had from the Information Section of the University either personally or by sending a self-addressed envelope (size 13 cmx28 cm) with postage stamps worth Rs. 3.45 p.

The candidates will have to produce the original documents relating to their age, qualifications, experience etc., at the time of interview.

Applications (separate for each post) accompanied by attested copies of Degrees, other certificates, marks sheets, published research articles, etc. should be addressed to the Registrar, University of Delhi, Delhi. However, applications for the posts marked asterisk(*) should be sent directly to the Programme Director, Unit of Plant Cell and Molecular Biology, Department of Botany, University of Delhi. The last date prescribed for receipt of the applications is **6-4-1985.**

Note

1. It will be open to the University to consider the names of suitable candidates for the posts of Senior & Junior Scientists who may not have applied. Relaxation of any of the qualifications may be made in exceptional cases, in respect of all the posts on the recommendations of the Selection Committee.
2. Canvassing in any form by or on behalf of the candidates will disqualify.
3. Candidates for the posts of Senior & Junior Scientists only from outside Delhi, when called for interview will be paid to and fro single second class rail fare.
4. The University reserves the right not to fill up any of the vacancies advertised if the circumstances so warrant.

Madan Mohan
REGISTRAR

UNIVERSITY NEWS

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Editor :
M. S. RAMAMURTHY

Conference of Vice-Chancellors of Universities in Asia and the Pacific Region

Given below is the Inaugural Speech delivered by Shri K.C. Pant, Union Minister of Education, on March 18, 1985.

"I am glad to have this opportunity of participating in the Conference of distinguished Vice-Chancellors from Universities in Asia and the Pacific region. I would like to first of all extend very warm welcome to all Vice-Chancellors who have come from various countries. I would like to tell them that it was thoughtful of the University Grants Commission to have convened this Conference to discuss the problems and prospects of higher education which we in this region share with each other. This Conference is of particular significance to us, as we have just initiated a process of reviewing and reshaping our educational policies and programmes to make them more relevant to the needs of our national development.

Throughout the world, questions concerning higher education are being discussed with increasing intensity. In many countries, there is an increasing awareness about the social dimensions of higher education. These concerns centre round matters like ensuring access to institutions of higher education for all, especially the disadvantaged and the less privileged sections; in certain other cases, the problem is of overcrowding of institutions and the consequent decline in the quality of education; there are also problems arising from the alarming increase in the number of unemployed graduates in many developing countries.

Life today, and its prospects for the future, are increasingly being conditioned by what we call the scientific and technological revolution. On the one hand, the new knowledge in science and technology opens up possibilities such as could hardly have been imagined earlier for raising the productivity of labour, overcoming hunger, solving the problems of energy and raw materials, and in making progress that satisfies the material and cultural needs of mankind. On the other hand, the scientific-technological revolution has increased the destructive power that threatens the very survival of humanity, and has brought the world perilously close to total annihilation.

There is, indeed, an imperative need that a scientific attitude and temper are developed from the early stages of education. Receptivity to changes in habits and attitudes will have a tremendous impact on productivity and also social consciousness. Early introduction to science and its ways will create the conditions in which technological changes can be absorbed and managed more effectively and fruitfully. This is the concern of the concept of "Science for All" in educational programmes. But the crucial question for the future of mankind is not just the advance in knowledge in science and technology, but what mankind makes of it, and does with it. Inevitably, a special responsibility devolves on those who acquire the latest knowledge in sciences and develop it further for use. It is the people who are trained in the institutions of higher education who have to assume this responsibility, as it is they who determine the use of all this knowledge. It is also from this premise that much of the increasing social concern for higher education arises.

The Asia and the Pacific Region has a long history. Its socio-cultural environment is rich and diverse. There are industrialised countries with a stable social system and with a long tradition of organised higher education. There are also countries with a rich cultural heritage and a long tradition of education, but which have still to modernise their systems in the present socio-economic context. There are also countries which have to build their education from the foundation upwards.

I had the privilege of participating in a Regional Conference of Ministers of Education held at Bangkok early this month. A variety of problems concerning education at all levels was discussed at this conference. While the situation in each country of the region is not exactly similar, a very significant aspect that emerged was a near unanimous concern for ensuring equity and social justice in all the countries. This trend that has become the bedrock of all education systems has undoubtedly had an impact. The main challenges in many countries of this region are related to shortages of physical facilities, of buildings, equipment, and resource materials. The response to the new challenges in terms of curricular and structural changes, linking higher education with manpower demands and developmental needs, and matching the generality of courses to the needs of the individual student, especially the first generation learners, has been slow. There is also an increasing awareness of the urgency to improve the quality and orientation of teachers in higher education. There was also a convergence of views that the open university delivery system in higher education would be an inescapable need to cater to the needs of specific target groups of the population. With the increasing availability of mass media, the flexibility of such a delivery system would not only become more attractive, but also functionally effective.

These are the major problems that confront us also in India. We have in our university system today an enrolment of 3.5 million students. A very conservative estimate indicates that this enrolment will double itself by the year 2000. Surely, we cannot afford to double the facilities for full time education to cater to the needs of such a large enrolment.

The patterns and models that we follow are influenced by the traditions of liberal education that we inherited at the time of our Independence. The administrative structures, the organisation of curricula, instructional methods and materials, the standards of assessment for students' performance, all these continue to be dominated by these traditions.

We have also developed the foundations of a fairly modern industrial infrastructure. In all our enterprises, including agriculture and industry, modern technologies are being progressively introduced. The application of these new technologies is creating a situation in which there is a pronounced mismatch between educational preparation and job requirements. A remedy to this situation can only be a massive programme of technical and vocational education. This would imply that we have to continuously study the changes that are taking place in the employment sector, in the job requirements and work patterns, and design appropriate programmes for skill development and skill orientation for a large number of our students so that they can enter the world of work with the required preparation. This is a task in which universities can perhaps play a significant role.

A massive programme of technical and vocational education will not by itself be a lasting solution. Perhaps, those who enter various professions at an early stage would surely be looking forward to higher education to improve their own prospects. There would thus be a far larger number of motivated learners who would want to pursue higher education at their convenience and at their own pace. It is to serve these emerging needs that we in India would look to the Open University delivery system. Such a system would be able to provide a wide range of programmes, from specific occupational training to simply literacy and aesthetic disciplines. The Open University should also pioneer experiments and innovations and influence the formal system in responding to the needs of the future. It is with these objectives in view that we are considering the establishment of an Open University in India. I am glad that several countries in the Asia and the Pacific Region have already established their Open Universities and gained considerable experience in this new experiment. I do hope that it would be possible for us to draw from their experience in initiating our Open University programmes.

Training and orientation of teachers is another area of major concern for us. A large body of our school teachers are trained by the universities and teacher training colleges. The curricula, the training methodologies and evaluation procedures are all the responsibilities of universities. In this area, it is necessary that we take a close look at the existing teacher training programmes and their methodologies. The conventional school teaching programmes have to be progressively oriented towards work and life situation. The vocational content of secondary education programmes has to be substantially strengthened. All this would need the preparation of teachers to face the challenges of tomorrow. It is in this field that I believe our universities should involve themselves more deeply in organising studies and research so that on the basis of the results of such studies, programmes of orientation of teachers could be designed and developed. This is specially important in the area of vocational education in schools. To assume these new roles, teachers in institutions of higher education themselves will require a new orientation. Some kind of an institutional arrangement for training of teachers in higher education is also an urgent need.

India is a vast country of many diversities, communities, languages and religions. Yet it is one nation. So have many of the nations of Asia been born out of the synthesis of similar diversities. It is, therefore, of utmost importance that each university in this region should endeavour to deepen national consciousness by promoting social cohesion through an understanding of the richness of the national heritage, and inspiring a strong faith in the future of the nation. This concern should be interwoven with the efforts to inculcate values of scientific temper, tolerance and respect for the cultures of all national groups. It should be through these efforts that our universities should prepare young men and women endowed with a deep concern for humanity, for promotion of peace and international understanding, and harnessing the explosion in knowledge and creativity for improving the quality of life. I can do no better to emphasise this role than quote the famous words of Jawaharlal Nehru:

> "A university stands for humanism, for tolerance, for reason, for progress, for the adventure of ideas, and for the search for truth. It stands for the onward march of the human race towards even higher objectives. If the universities discharge their duties adequately, then it is well with the nation and the people. But if the temple of learning itself becomes a home of narrow bigotry and petty objectives, how then will the nation prosper or the people grow in stature"?

I am grateful to you, Madam Chairman, for giving me this opportunity to be present with you this morning, and share with you some of my thoughts. I do hope that from your deliberations in this Conference, there will emerge the reaffirmation of the sense of Asian identity and that your Conference will come out with positive recommendations for meaningful cooperation in higher education among the countries of the region. I have great pleasure in inaugurating this Conference". ☐

UNIVERSITY OF CALICUT

Calicut University P.O. 673 635

No. Ad. F2/2136/84 **Dated : 4 3.1985**

Vacancy of Registrar—Renotification

Applications are invited from qualified candidates for appointment to the post of REGISTRAR of the University of Calicut. The post carries the Scale of Pay Rs. 1650-75-2175.

2. Candidates should have a First Class or Second Class Post-graduate degree and 5 years' teaching experience at University level and about 5 years' of administrative experience in a responsible post including management of staff in a University or College or similar institutions.

Age : Between 40 and 50 years as on 1st January 1984.

3. Applications on plain paper containing details of qualification, experience, age etc. along with true copies of relevant certificates and a crossed Indian Postal Order of Rs. 10/- drawn in favour of the FINANCE OFFICER, UNIVERSITY OF CALICUT and payable at CALICUT UNIVERSITY POST OFFICE should reach the undersigned on or before **APRIL 20, 1985** during office hours.

REGISTRAR

Quality Improvement in Agricultural University Education of Maharashtra

M.C. Varshneya*
R.K. Parakale**

Introduction

Agricultural Universities in India were started in 1960, on the pattern of Landgrant College of America. Looking at the success of teaching and research activities of G.B. Pant University of Agriculture and Technology, Pantnagar, U.P. all the State Governments in India decided to start an Agricultural University in each State. However, under democratic compulsions Government of Maharashtra started four Agricultural Universities instead of one. Also, instead of single campus activities like Pantnagar, Ludhiana and Hissar, in Maharashtra, multi campus activities of teaching, research and extension were started. Naturally Landgrant model of agricultural education could not succeed in Maharashtra State.

It is, therefore, appropriate to find an different model of agricultural education for Maharashtra suitable to its own social and democratic needs.

Aim of Agricultural Education

In searching for an appropriate model of education one should be very clear about aim of agricultural education. Whether we wish to produce graduates for improving our farming system, social and economic conditions of farmers and agricultural production of the state or we wish to produce graduates, postgraduates and agricultural technologists for serving in the government departments, commissions and private agencies. Agricultural educational requirements of these two sets of aims are entirely different from each other. Educational system devised for one cannot fulfil requirements of the other. However, in practice we start for the needs of first and end-up in second. Present day mess of our agricultural education system is because of lack of direction in our educational system.

Methods and Modifications

If we opt for imparting instructions in agriculture to produce graduates for improving our farming system, social and economic conditions of farmers and agricultural production of the state, then following changes will have to be effected :

(1) In our prevalent agricultural education system we give some practical knowledge with more theoretical information to the students. This trend will have to be reversed by sand-wiching of theory classes between the practicals.

(2) Each student should be allotted a small farm of 1 to 2.5 hectare at the time of admission which he should cultivate throughout the period of his under-graduate education. The student should be imparted with theoretical information only as and when he needs, otherwise he should grow crops popular/required in this area and should practice the methods of improvement while cultivating.

(3) University should dispense with periodical examinations such as quizz, mid-term and semester final examinations. Rather crop-stand, yield and actual income from his plot should be the measures of evaluation of student's performance. It can be supplemented with one or two examinations in whole educational career.

(4) Teachers should impart instructions on farm only while working with the students.

(5) Input materials should be provided by the University on cost basis and produce should be sold by the student in open market.

(6) Training should be imparted in semi-mechanised methods of cultivation.

(7) Degrees should be delinked with the service qualifications forcing students to go back to their farms only.

In case we desire to produce graduates, post-graduates and technologists for employment in Government Departments, Commissions and in Private Sectors then following changes in the present system will have to be incorporated:

(1) More courses on management techniques, secretarial practices, mathematical and physical formulations, computers and in modelling should be introduced, which can help them in running the department efficiently.

(2) In case of technical education courses on labour management, market survey, marketing of the product, production techniques and on communication should be stressed.

(3) All these courses should be designed in consultation with the concerned department, industry, and research institution.

(*Continued on page 6*)

**Professor of Physics and **Associate Dean, College of Agricultural Engineering, Mahatma Phule Agricultural University, Rahuri.*

LEARNING FOR CONSOLIDATION

Lalit Kishore*

It has been established now that education consists of the processes of teaching and leansing evoking change in the learners' behaviour. And teaching means the strategy to affect the desired behaviours in the student. Not only] the desired behavioural changes should be merely affected but these should become permanently embedded in their nature. This kind of instructional situation demands the consolidation of the student's present learning task before his moving on the next related learning task.

In order to make the students consolidate their learning of an assigned task, the classroom instruction should be made student-paced. In this regard Lounsbury and Vars say that every student should be given the opportunity to progress at his own rate through a continuous and structured sequence of learning experiences. The self-paced instruction has got another advantage; that of providing students a feeling of adequacy in their learning. Mehren and Lehmann suggest that the degree of learning is a function of time spent on the learning material. If the degree of learning is fixed at some mastery level then the amount of time an individual will spend to reach that level will vary.

There are a few learning models based on the concept of learning for consolidation. The important amongst them are: Bloom's Mastery Learning Model, Keller's Personalized System of Instruction and Mathur's Individually Guided System of Instruction. Such models have become very popular in many countries. A survey report by Hess indicates that more than 50% of the total courses available in the U.S.A. are based on the models emphasising consolidation of learning step by step. There is a growing demand for such models in India too with the individually Guided System of Instruction gaining momentum in many institutions.

Consolidation : A Must

Making students contract for consolidation based on a level of performance has the advantage of causing students to evaluate their own abilities and chart their progress in realistic terms towards the desired behaviours.

Basic to learning for consolidation is the fact that when students are given enough learning time and frequent corrective feedback, most of them can master a given learning task. According to Bloom, most students (perhaps over 90%) can master what we have to teach them. The instructional variable can be manipulated so that a good majority of students reach a prescribed performance level indicative of students' consolidation of the assigned learning task.

Fixing Performance Level

Yet another dimension to the instructional strategy based on the consolidation of the present learning task by the student is, that it involves establishing a minimal performance level. According to Pophan and Baker (1970), fixing minimal level of performance not only allows the teacher to identify that which a particular student has achieved the stated instructional objectives but also serves the purpose of providing a standard by which the teacher can measure his own performance.

In regard to fixing the minimal performance level, it should be kept in mind that the level should be realistic. It should be based upon the capabilities of the students of the class. Generally, a performance level of 80% marks in the test is fixed for as a measure for consolidation of the students' learning. If a teacher finds this performance level too high for his students, he should reduce it to an appropriate level to make it realistic.

Readiness Testing

Readiness testing is an essential component of the strategy of learning for consolidation. The test works as a tool to assess the extent to which the student has been able to aohieve the performance level fixed for him to advance to the next learning task. In this regard Bruchfield observes that in the fact of lack of readiness of the student to move on to the next learning task, the student feels frustrated under the forced motivation of doing it.

Readiness test also works a feedback for the instructor to set corrective and remedial instruction for his students. According to Bloom, the main purpose of readiness testing is to indicate the extent to which mastery learning has occurred, and to enable the instructor and the student to know precisely whether or not the student is mastering the task. Thus, the advantage of such a test is that each student is diagonised and subsequently prescribed the learning opportunities which will lead to the consolidation of his learning.

Feedback Loops

Testing can become a valuable tool for learning if there are feedback loops in the learning model. These loops are essential for correction and remidiation in learning. In the strategies based on the concept of learning for consolidation, there are sufficient numbers of feedback loops at various stages of learning.

**Research Fellow, Panjab University, Chandigarh.*

The self-testing exercises work as student's own feedback in knowing his weak spots and providing for individual guidance from his peers and the teachers. Also, the student's performance in the readiness test works as another feedback for the teacher to plan remedial instruction. In such instructional strategies, after every testing session, the student receives feedback and thus testing becomes a part of learning experience.

The Complete Learning Model

In the instructional procedures based on the mastery learning concept, each student paces himself through a course of study comprising small learning units. When the student feels ready he takes a test on it which he has to pass with marks more than the prescribed cut-off level. In order to get the next unit, otherwise the student repeats the unit taking individual guidance till he passes the readiness test.

The following is the outline of the mastery learning strategy suggested by Bloom:

(1) The course is broken into small units covering one or two weeks of instruction;

(2) The instructional objectives are clearly specified for each unit;

(3) The student is allowed to pace himself through the unit;

(4) Readiness tests are administered at the end of each learning unit to determine whether each student has mastered the unit, and if not, what he still has to do to master it;

(5) Specfic procedures for correcting learning deficiencies such as working with other students in small groups, re-reading specific pages, and using programmed instruction and audiovisual aids as well as additional learning time are prescribed for those who did not achieve consolidation. Retesting may be done after corrective study.

Such instructional models can work as viable alternatives to the traditional lecture model of instruction. The studies in Indian context have shown that such models are superior to the lecture model from the point of view of students' preference, achievement and retention of subject matter. Therefore, it becomes quite imperative to switch over to the models based on the mastery learning concept. And such learning models can be easily implemented as they do not require new extra expenditure and learning materials. □

Quality Improvement in Agricultural University Education of Maharashtra

(*Continued from page 4*)

(4) Number of seats for admission should be decided in consultation with the employing agency and projecting the needs for next five years.

(5) A common examination of all four agricultural universities will ensure uniform standard of evaluation.

(6) Open book examination be introduced in some courses such as mathematics, statistics etc.

Teaching Facilities

(1) Lecture halls be equipped with over-head projector, slide projector etc., so as to help the teachers in expressing their subject in an impressive way.

(2) Educational films be shown every fortnight to teach the students about modern developments in that branch. For this purpose a section of film library be opened in University Library.

(3) Educational tour should be made compulsory and a brief report should be submitted by the students to their tour leader and in turn to the College/University.

Improvement in outlook about teachers and teaching profession

Agricultural universities in Maharashtra are still haunting by the spirit of State Government Department of Agriculture. Teachers/Professors are given less importance than administrators. To add insult to injury teaching work is given least weightage.

To improve quality of agricultural university education we will have to change our outlook towards teachers and teaching profession. In this regard following changes should be incorporated :

(i) For all selections and promotions to higher positions teaching experience should be given weightage at par with research experience. Number of students taught at postgraduate level and number of papers taught at undergraduate level should be given weightage at par with research papers published.

(ii) Selections and appointment of teachers should be done by an impartial state level commission.

(iii) Professors should be given opportunities to improve their qualifications.

(iv) Financial and administrative powers be decentralised and be vested in Professors instead of centralising them in Deans/Registrars etc. □

AIU Seminar on Reservation of Seats

Given below are Extracts from the speech of Shri T.N. Chaturvedi, Comptroller & Auditor General of India, delivered at the Seminar of the North Zone Vice-Chancellors organised by AIU & the Gurukula Kangri Vishwavidyalaya, Hardwar, on Reservation of Seats for the Weaker Sections of Society, from January 18 to 20, 1985 at Hardwar.

It is a saying of the Veda that we all are the sons of one and the same God. Then why are we different? Why some parts of our body are untouchable or inferior or low? This is a great irony, a disharmony, a deformity with which Indian society has been suffering for long. The bitter fruits of this disharmony and deformity had to be reaped by the country for centuries together. I do not go deep into the religious and philosophical background of the issue. Suffice to say that in our country one class of people is known as Scheduled Castes and Scheduled Tribes and Backward Classes. These are the people who on account of historical, geographical, traditional and other reasons have been alienated from society, and thus their problem is serious and calls attention. Third four years have passed since the new constitution of India came into force. This Constitution guarantees quality to all and has made provisions of some special facilities and comforts to this neglected class of people. Even then we see that the promises and assurances given to them do not stand fulfilled and there is a gap between saying and doing. Consequently the problem has become more serious and complex. It is expected of you that you should offer suggestions and directions in conferences like these based on experiences and thoughts. The period of three decades was enough for the determination of direction. But we still need direction and determination.

Democracy does not mean only a political unity and organisation. It also aims at social, economic and cultural development. We shall be able to have a true democracy only when there is a harmony and adjustment between all these aspects. This was the objective of freedom. When we were under a foreign rule it was said that the foreign rule is the main obstacle in our progress and is the root cause of 'arrested economic development'. Now we should remove all the obstacles and build a society where there is no feeling of the high and low, superior and inferior.

Swami Dayanand, Vivekanand and Gandhi said a great deal about this problem. Everybody is aware of the great work done by Swami Shraddhanand in this respect. This problem is mainly social and involves social security and social determination.

You will forgive me if I say that such meets should be organized not merely at the university level but also at the level of Primary and Secondary Education. For the development of all we have to offer equal opportunity of education. If primary education is good, higher education shall also be good. Hence steps should be taken to improve the primary and secondary educational standards, more particularly of the children of the neglected classes. Libraries should be opened to them, special coaching classes and other provisions should be made to improve their standards of education. Either by law or by other means all should be educated with a uniform standard of education or else the problems shall go on increasing.

As Education Secretary and Home Secretary of the Government of India I have some experience of the problem related to the reservation of seats to the SCs and STs. I had a chance of looking at the reports of a number of committees and commissions on this issue, more particularly the Mandal Commission Report and one by Shri Man Mohan Singh Ji. Out of my observations and experiences I can say that the Primary and Secondary education is not what it should be so. There is lack of motivation and enthusiasm both amongst students and teachers. Scholarships, hostels and improvement in physical facilities alone are not the answers to the problem. In order to reach the root of the problem the concentration should be on Primary Education.

Gone are the days when any section of society could accept itself as 'second best'. Social and political consciousness is so much that everybody aspires for the best education to his child. We are a welfare State, we have to provide welfare education—education for education and culture, for life as well as for career and job. Education is the best investment on man to develop the human in him. It should be for the development of man, for the development of his family and for the development of his society or nation. When we look from this point of view, the problem of the SCs and STs becomes much more challenging and complex. We must ponder: what is development, who gets what and how much? Education is a means, a path, a way to get more and more. We should see that there is rationalization and all get equally. If there is no rationalization, problems will increase, deformities will creep in. Education also means liberation of mind and heart. If education fails to free you from selfishness, then it only rationalizes selfish interests and influences every field aggressively. An aspect of development is justice which can be given not merely by slogans but by systematic planning. Are all of us getting justice? Universities have become victims of regionalism. In such an atmosphere reservation is necessary and inevitable way towards justice and progress because of the historical reasons that led to the neglect of certain sections of our society. But an atmosphere must be built by which this reservation becomes a temporary device, leading to its abolition in the future. Not mere reservation is enough. What is needed is the removal of the feeling of caste and creed, of superiority and inferiority. With the increase of education and development, social disharmony and tensions would be lessened, new society will be built. But with development develop new tensions. The problem of SCs and STs has remained for consideration with the Mandal Commission. The States too had their Committees and Commissions on this issue. Mostly they are of the opinion that for reservations we should go for economic criterion. But reservation at present is a must. But we shall have to chalk out the programmes in such a manner that the reservation should not be necessity in the future. Some SC candidates selected in the general list of IAS approached me once saying that they had been selected on the basis of merit, then why were they labelled as SC candidates. This means that the feeling of equality has got to be respected. It is the responsibility of all of us that we should develop this feeling of equality and end distinctions of caste and class. The conflicts that disturbed Gujarat a few years ago lead us but to disintegration. We should not do anything that may cause social disintegration. Reservation influences educational standards. But it cannot be abolished without giving equal opportunities of development to all the sections of society. The speed of development should be accelerated.

Gandhi, Dayanand and Guru Nanak have advocated adherence to Truth. Guru Nanak has said that Truth is very great. It is difficult to live with Truth. Hence we should find out a solution to the problem of the SCs and STs with sincerity, truth and honesty. □

Maharashtra H. V. V. Samiti's

COLLEGE OF SOCIAL WORK

Vasant Nagar, Jawahar Colony, AURANGABAD-431 005

WANTED

Applications are invited alongwith testimonials from the suitable persons for the following posts:—

1. Principal
2. Lecturers (2) One post is reserved for S.T./N.T./D.N.T.

Qualifications :—
1. Master's Degree in Social Work.
2. Consistently good academic record with at least First or Second Class (B+) at Bachelor & Master's Degree.
3. M.Phil degree or equivalent degree or published work indicating the capacity of candidates for independent research work.
4. At least Ten Years teaching experience for the Post of the Principal.

Note: Pay & Allowances & Service conditions will be as per State Govt. and Marathwada University rules. Higher start may be given in case of deserving & experienced candidate. Terms & conditions will be relaxed according to merit.

The applications should reach to the **Secretary, College of Social Work,** Hindi Bhavan, Shahagunj, Aurangabad (M.S.) 431 001, on or before 20th May, 1985.

SECRETARY

Dr. 'Suman' Addresses Convocation of Avadh University

Given below is the abridged Convocation Address delivered by Dr. Shiv Mangal Singh 'Suman', Vice-Chairman, Hindi Sansthan, U.P., at the Avadh University on February 16, 1985.

"At the outset I offer my congratulations to all research scholars, the graduates and the gold medalists who have obtained their degrees today. On this solemn occasion, I greet them warmly and pray that they get sufficient strength to shape the destiny of the nation.

I consider it my great fortune and an historic event to participate in the Sixth Convocation of Avadh University. I feel enthrilled to step into the sacred soil of this place, and I have a feeling that if at all there is a congruence of the past, present and future, it is here on this very soil. The ancient glory of India mirrored in the images of Lord Rama and Bhagwan Buddha, the medieval grandeur expressed in the mausoleums, minerets and Islamic art and culture and the present reflected in the form of a university on seeing all the three coalesce here, I feel overwhelmed by waves of emotion surging in my heart. Possibly no other town in whole of the world offers an emotional integration of such a high order. On the sacred soil of this Avadh region two of the greatest poets of the world—Jaise and Tulsi—resided and wrote their immortal works. One hardly finds this rare combination of two of the most lovely flowers-rose and lotus-blossoming side by side in a beautiful garden.

It is common knowledge that our paragon of virtue and piety Lord Rama, has become a living symbol of Indian ethos. His hallowed image has infused each and everyone of us. And his Avadh-Ayodhya, that is—has become the supreme centre of pilgrimage where people of every shade and colour come and synthesize culturally. The guiding spirit of Indian culture for centuries and the manual of code of conduct—Ramcharitamanas was composed here, in this holy place. I have attended so many convocations but to-day I feel spiritually moved and it appears as if I have not come to attend any convocation. Rather I have reached inside a temple, mosque, or a gurudwara or a church. Intuitively I realise that I have taken a dip into the holy water of the Ganga.

It is not an ordinary thing that this Avadh region is the birthplace of Lord Rama and has been lord Buddha's favourite field of action. To the modern world-self seeking, vainglorious, enveloped by the dark forces of evil—Lord Rama's piety, His ideal polity (Rama Rajya) and Gautam's pity and sympathy, non-violence and love, like beacon lights, illumine the right path.

You have called me at such a dramatic and transitional hour when India's democratic institutions are ready to enter a new phase of development. On the eve of the general elections for the state assemblies, this convocation on its own has turned into a stepping stone, a happy prelude, to the unfolding of a new chapter and to the infusing of a new spirit of dedication. The new graduates in this convocation, should, therefore, be ready to dedicate themselves to the new responsibilities that they have to undertake for building a strong India. Now, indulging in demonstrations and agitations will not help. The time has come when the youth power shall have to be put to baptism of fire. The graduates have, no doubt, secured their academic distinctions. Now they have reached the turning point of their careers. They will have to rededicate themselves to the service of the nation. Their academic excellence will be tested again in how they meet the new challenges. For, the security of the nation's integrity, prosperity and honour rests on the strong shoulders of young men and women. To this end they shall

Dr. Shiv Mangal Singh 'Suman' delivering the Convocation Address have to remain alert and devoted.

For the independence of any nation, three essentials are required, national flag, national anthem and national language. We got our national flag and national anthem but the national language slipped out of our hands. Indeed, it is very distressing and a matter of national shame. We betray our dormant slavish mentality when we speak foreign language in our discourse with foreign countries. It is not a shame to be poor, even political slavery is not that shameful but the language slavery with its resultant mental slavery and the slavery of the soul is a matter of deep shame. Language clothes the soul of the nation and symbolizes its integrity and identity. And yet our soul is still in bondage and we are mute witnesses to this shocking state of affairs.

The language controversy has bedevilled us and befogged our vision of national interest. To establish any one particular language as national language does not mean according it a primary status and giving a secondary status to other languages. Making of Hindi as lingua franca does not at all mean placing the spoken language of Uttar Pradesh on a high pedestal. Hindi should be made the national language with the sole intention being that it can be spoken and understood right from Kashmir to Kanyakumari and from Punjab to Assam. This Hindi as national language should express the hopes and aspirations of the people of Bengal, Assam, Orissa, Tamil Nadu, Karnataka, Andhra, Kerala and of the people living in remotest corners of the country. Just as in the Ganga, the strong currents of the Yamuna, the Gandak, the Sone, the Bagmati, the Saryu and of the other rivers are immersed and make Ganga a vast expanse of water, in the same way in Hindi the peculiar features, notes, echoes and music of the Tamil, Telugu, Kannada, Malayalam and other languages should blend and harmonise and make it all embracing.

In this context the responsibility of the Hindi-speaking people becomes all the more great. In the name of Ram katha, they will not only sing the verses of Tulsi's Ramayan but will also have to sing the verses of the Ramayan composed by Kamban, Krittivasa and others. They shall have to learn Bangla, Tamil, Kannada, Telugu, Malayalam and other languages and assimilate them. To bring the culturally and politically united India to the pinnacle of progress, a relentless struggle shall have to be waged against regionalism, linguism, casteism and nepotism. We will have, therefore, to be broad-minded and exhibit a sense of moderation and tolerance.

You are being transformed into learned scholars. But remember one thing. Scholarship does not consist in mere obtaining of degrees. "सा विद्या या विमुक्तये" Learning is that which liberates us. We will feel liberated only when we help others also in the process of deliverance. That learning which does not instil the sense of eternity is of no use, Gargi and Maittreyee who devoted themselves rigorously to the quest of eternal truth were not merely involved in the unravelling of some profound riddle of life while meditating in solitude. The awakening of noble feeling of universal brotherhood, welfare of humanity accompanied by continuous efforts for the progress of the nation and the development of personality—this is what is called 'Amrit-Vidya'. You, the graduates of the year, have to dedicate your life for the attainment of this very concept." ☐

UNIVERSITY GRANTS COMMISSION
BAHADUR SHAH ZAFAR MARG
NEW DELHI

The University Grants Commission has to appoint a Director (Science) by transfer on deputation basis for a period of one year for the present.

The appointment will be made by transfer on deputation from amongst persons who have served or are serving as Senior Readers or Professors with Science or Technology background in Universities or Institutions of higher education with atleast 10 years experience of teaching at postgraduate level or guiding research and experience of educational administration or from amongst persons who have served or are serving as officers in the Central and/or State Governments, Universities and other Autonomous organisations, Public Enterprises, etc. in the grade of Rs. 1500-2000 with five years experience and having experience of educational administration and interest in development of Science programmes.

Duties

Work relating to strengthening, monitoring and evaluation of Science and Technology infrastructure in the higher education system on a selective basis and such other duties as may be assigned from time to time.

The post carries the Scale of Pay of Rs. 2250-125/2-2500 or Rs. 2500-125/2-2750 (depending upon the availability of suitable person) plus usual allowances as admissible to Central Govt. servants in corresponding posts stationed in Delhi/New Delhi. The officer selected for appointment on deputation will have the option to draw his own grade pay plus deputation (duty) allowance or to have his pay fixed in the scale of pay of the post as per Government of India's Rules/Orders on the subject as amended from time to time.

The selected officer will be entitled to the benefit of the Central Government Health Scheme and allotment of residential accommodation in the General Pool of the Government of India in his turn.

The applications on plain paper addressed to the Chairman, University Grants Commission by name giving full particulars about age, academic qualifications, experience of educational administration etc., alongwith names of two persons to whom reference may be made by the Commission should reach the Chairman, University Grants Commission, Bahadur Shah Zafar Marg, New Delhi-110002 by **8th April. 1985**. Persons already in employment should send their applications through their employers otherwise these will not be considered.

Candidates called for interview will be paid first class railway fare from the present place of their residence to New Delhi and back by the shortest route.

davp 823(16)84

Panjab Varsity's National Seminar on Progress in Mycology and Plant Pathology : A Report

A National Seminar on Progress in Mycology and Plant Pathology was held on February 2-3, 1985 in the Department of Botany, Panjab University, Chandigarh. It was sponsored by the University Grants Commission and the Panjab University. Prof. C.L. Mandahar was the Director of this Seminar. Dr. M.S. Randhawa inaugurated the Seminar.

Four sessions were devoted to the "Threatening Plant Diseases" as well as to the emerging threat of some new diseases to cereals, pearl millet, horticultural and forest trees, groundnut, pulses and vegetables. Attention was particularly focussed on the current threat, epidemiology, and control of apple scab, wheat rust, Karnal bunt of wheat, ergot and downy mildew of pearl millet, potato and tomato diseases, and mango malformation. Prof. S.P. Raychoudhuri and Prof. L.M. Joshi delivered the keynote lectures.

The above mentioned diseases are widely recognized threats to their respective crops in almost all the regions where these crops are grown. However, some diseases are still localized in only certain regions. These diseases are likely to spread to other regions and are the ones that are emerging as potential threats to their respective crops. This is true of false smut of rice in Punjab and Haryana, groundnut rust in Andhra Pradesh and Madhya Pradesh, coconut wilt in Kerala, Soyabean yellow mosaic in Madhya Pradesh, cowpea golden yellow mosaic in U.P., pigeon pea sterility mosaic in U.P., and rice tungro in Orissa and Bengal. The virus diseases like soyabean yellow masaic, cowpea golden yellow mosaic and pigeon pea sterility mosaic spread from a single plant to the entire crop within a span of 3-4 years. These dangers must be recognized and efforts are already afoot to control them by using insecticides, clean seed and cultivation of resistant varieties.

A panel discussion was held on "Fungicides—As Environmental Pollutants and Health Hazards". Dr. R.K. Grover, Dr. Y.L. Nene and Dr. J.C. Majumdar were the three members of the panel. Some very important points emerged during this session.

(1) There is no threat in India as yet by rightful usage of fungicides by farmers to control plant diseases. Total consumption of fungicides in India is very low as compared to that in developed countries. The average consumption of fungicides in India is only 425 gram per hectare compared to 4000 gram per hectare in Japan and 2000-3000 gram per hectare in the U.S.A. Moreover, even 15-20 applications of copper fungicides to control blister blight of tea does not have any adverse effect on soil microbes.

This consciousness among the phytopathologists and environtalists of the possible damaging effects of the over use of fungicides is now itself a factor against the development of harmful situations as reported from developed countries. Excessive use of copper fungicides in certain parts of the U.S.A. has caused many cherry orchards going out of cultivation. Similarly, excessive use of organophosphorus fungicides kills the earthworms which are so useful for soil fertility.

Government of India now has a Department of Environment which has various committees to monitor and investigate such excessive use of fungicides and pesticides. On the whole, therefore, there is little possibility of fungicides acting as environmental pollutants and health hazards in India by their rightful use.

(2) However, these fungicides and pesticides, if misused by farmers and tradesmen, do act as environmental pollutants and health hazards. Several such instances of misuse were cited. Methly parathion is a highly toxic insecticide. Vegetable sellers in Delhi are known to dip vegetables in this insecticide to improve their luster and outlook. Farmers in Maharashtra commonly dip patato tubes in aldrin, another toxic insecticide, before selling them in market. Aldrin protects the potatoes from insect but makes them highly dangerous for human consumption.

One session was devoted to the Taxonomy of fungi. Dr. A.K. Sarbhoy delivered the keynote address while Prof. K.S. Thind and several other mycologists presented papers on the present position, trends and anticipated future developments in the taxonomy of various groups of fungi. Dr. Naryan Rishi spoke on the taxonomy of plant viruses. It was recommended that a museum of fungi be created in the Department of Botany, Panjab University, Chandigarh.

Role of growth Hormones in plant disease development and symptomatology was discussed in one session. A definite role of cytokinins during the infection and pathogenesis by hemibiotrophs was pointed out by Prof. Mandahar. Dr. R.P. Purkayastha spoke on the induction of resistance by the application of various growth hormones. Papers were also presented about the role of abscisic acid and gibberellins in the development of symptoms in plant virus diseases.

"A National Media Seminar" at Allahabad Varsity

A National Media Seminar, dubbed Media Meet 1985, was organized by the School of Journalism, Department of Political Science, on February 2 and 3, 1985. The Seminar was sponsored by the Age of Enlightenment News Agency, New Delhi, an organization founded with the blessings of Maharshi Mahesh Yogi.

The focal theme of the Seminar was "The Role of Positive Journalism" and included such speakers as Mr. S. Sahay, Editor, the Statesman, Mr. Raghubir Sahay, former Editor, Dinman, Mrs. Amita Mallik, Mr. Prabhash Joshi, Editor. Jansatta, Mr. Rajendra Mathur, Editor, Nav Bharat Times, Mr. Baldeo Sahay, Managing Director, Sampark Public Relations Consultancy, Mr. R.N. Verma, former Assistant Editor, the Hindustan Times, and many other Editors of regional papers.

The Vice-Chancellor, Professor R.P. Misra, presided and Mr. Tuhin Kanti Ghosh, Chairman, United News of India and Managing Director, Patrika group of newspapers, inaugurated the Seminar.

The first session was chaired by Mr. K.B. Mathur, Editor, Amrit Prabhat. Speaking at this session, Mr. Rajendra Mathur contended that there could be no such thing as positive or negative journalism. There was only good or bad journalism. Mr. Baldeo Sahay stressed the need for understanding and using the latest technologies.

The second session was chaired by Mr. Baldeo Sahay. Speaking at this session, Mr. Ravindra Nath Verma said that the Press in India today is unable to create a new mass consciousness which is relevant to the needs of the present society. Mr. Prabhash Joshi highlighted the fact that free media were the only way to positivity because only then could the media be honest and strong. He felt that the Government, by suppressing journalistic drives, was encouraging negativity in the media.

Mr. S.K. Bose, Editor, Northern India Patrika, chaired the third session. The speakers—Mr. S. Sahay and Mr. Laxmikant Verma—stressed that a new kind of developmental journalism was necessary to project the right picture of society and help in the progress of the country.

Media Meet 1985 called upon all scribes to uphold and educate the nation not only to maintain our integrity and sovereignty but also to mould ideas in such a way that India could once again be recognized as the fountainhead of worldy wisdom and justice.

The valedictory session was presided over by Dr. Ram Kumar Verma.

JNU scraps system of provisional admissions

The Jawaharlal Nehru University has decided to abolish the system of provisional admissions from the next academic session. The Academic Council of JNU which met recently decided that no student will be admitted to any programme of study henceforth in the University without submitting all documents as prescribed, including result of the qualifying examinations at the time of admission.

The Council decided that no admissions will be permitted by the University after the middle of August every year. Students will have to submit all their papers before 14 August for admission to any programme of study at JNU.

UNIVERSITY NEWS

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I, M. S. Ramamurthy, hereby declare that the particulars given above are true to the best of my knowledge and belief.

Sd/-
Publisher

International Symposium on Artificial Radioactivity at Poona Varsity

The University of Poona, jointly with the Department of Atomic Energy, organized recently an International Symposium on Artificial Radioactivity to commemorate the 50th year of its discovery by Frederic and Irene Joliot-Curie. Though radioactivity has been known these 90 years, it was confined to the heaviest few elements occurring in nature as thorium and uranium and their decay products as polonium, radium etc. It was only in the year 1934 that Frederic and Irene Joliot-Curie discovered a way of inducing rodioactivity artificially in common elements. This won for them the Nobel Prize for Chemistry in 1935.

The symposium was inaugurated by Dr. Raja Ramanna, Chairman of the Atomic Energy Commission and presided over by Prof. V.G. Bhide, Vice-Chancellor of the University. Attended by over 250 delegates of whom 27 were from countries including England, France, Germany, Japan, Nepal, Netherlands and USA, the Symposium reviewed the status of progress of the subject of artificial radioactivity in the areas of :

(1) Production and Applications of Radioisotopes; (2) Nuclear Chemistry; (3) Exotic Nuclei; (4) Hot Atom Chemistry; (5) Radiation Chemistry; (6) Chemistry of Transuranium Elements; (7) Radioanalytical Techniques.

In all, 45 invited lectures, 60 research and 50 poster papers were gone through in several plenary and three parallel sessions spread over the five days of the Symposium. Extended Abstracts of these were made available to the delegates before the Symposium in the form of a 1200 page Preprint Volume and full papers and detailed proceedings of the Smyposium will be published in due course.

Dr. Raja Ramanna, in his inaugural address, paying tributes to the vision and planning of Dr. Homi J. Bhabha who had planted the seeds of nuclear sciences in India as early as 1948 and to our first Prime Minister Pt. Nehru, traced the important landmarks in the country's progress beginning with the Boiling Water Reactor Apsara to the Tarapur Power Plant to the present day pressurised Heavy Water Reactors producing power in the Rajasthan and Kalpakkam stations. He visualized the day when we shall be having abundant nuclear power through Fast Breeder Reactors. The long term programme according to the Chairman of AEC, envisaged the development of thorium reactors to avail of the element occurring in abundance in the Country.

Madame Professor Helene Langevin-Joliot, the cheif guest of the University, presented a brief historical account of the pioneering work of her grand parents, Pierre and Marie Curie in the discovery of radioactivity and in the isolation of polonium and radium. The grand stages and important subsequent progress in our knowledge regarding the structure of the atom, the discovery of the neutron and the positron culminating in the discovery of artificial radioactivity by her parents were recounted by her with enlightening illustrations of the apparatus and equipment used in the historic discovery of the first prepared artificial radioisotopes Nitrogen-13 and Phosphorus-30. A very large number of original photographs of the Curie-Joliot families as well as a colour-sound film made by Prof. Philippe Albert commemorating the 50th anniversary of the discovery were presented to the University by the French Atomic Energy Commission.

The rest of the proceedings of the Symposium, spread over five days, were devoted to technical discussions covering specified areas.

Computer Science Department established at Cochin Varsity

The Department of Computer Science of the University of Cochin came into being on February 6, 1985 when it was formally inaugurated by the former Educational Adviser (Technical) to the Government of India, Prof. C.S. Jha, at a function presided over by the Vice-Chancellor Dr. K. Gopalan.

Inaugurating the department as well as its new M. Tech. programme in Computer Science, Prof. Jha paid tributes to the University of Cochin for the contributions it had made in promoting advanced research and training in many frontier areas of science and technology. The University had grown into a 'hi-tech' institution of great importance. Elaborating on the multifarious applications of computers and the information revolution that was sweeping the world, Prof. Jha said that India had a long way to go in the area of computerisation. It was sad that millions of our students did not have access to a computer. The problem was also not so much a question of providing computer, as the mammoth effort that had to be put in to train people to use computer. Prof. Jha also emphasised the importance of utilising computer for the welfare of the poor people of India.

The M. Tech programme in Computer Science had the approval of the All India Council for Technical Education and the University Grants Commission. The UGC had provided a non-recurring grant of Rs. 20 lakhs and a recurring grant of Rs. 4.8 lakhs for running the programme. All the 12 students to this programme were admitted through the Graduate Aptitude Test in Engineering (GATE) conducted on an all-India basis and each one of them would get a scholarship of Rs. 1000 per month.

Presiding over the meeting, the Vice-Chancellor, Dr. Gopalan said that the Government of India had recently approved the establishment of a major computer facility costing about Rs. 200 lakhs at the University as a joint venture of the Defence Research and Development Organisation (DRDO) and the University. Similarly the Science & Engineering Research Council (SERC) of the Government of India had approved the establishment of a dye-laser centre at the University for strengthening front-line research in laser spectroscopy. The dye-laser facility which would be the first of its kind to be provided in an Indian University by the Department of Science & Technology (DST) would serve as a common facility to be utilised also by other universities in Kerala and neighbouring states.

ISM Golden Jubilee Lecture

In this year's Golden Jubilee Lecture of the Indian School of Mines on 'Coal for the Metallurgical and Domestic Sector in India', delivered on the 16th January, 1985 by Dr. B. K. Mazumdar, Director, Central Fuel Research Institute, Digwadih, Dhanbad, Dr. Mazumdar pointed out that like humanbeings World's coal belongs to one family structurally related, with the apparent difference in physical appearance, as in colour, or in mineral matter contents. Therefore, there is not much of a difference in the behaviour of the coking coal of the world. Dr. Mazumdar suggested that various types of coking coal could be classified according to the atomic hydrogen/carbon ratio which varies between 0.64 to 0.70 for coking coals. There was a happy note in his address, as he pointed out that 30% of the total reserve of coal of any country contains coking coal, and if prime coking coal is blended judiciously with semi-coking, poorly coking and non-coking coal, India can go a long way in improving demands of metallurgical coal by the steel industry.

Dr. Mazumdar also stated that oxidised or weathered coal does not produce smoke during burning. About 30 million tonnes of weathered coal are available only in Jharia coalfield alone. As the weathered coal is friable, this could be easily mined and given free to the rural poor people as an alternative fuel to fire wood and animal wastes whereby our country will be able to conserve our forests and avoid atmospheric pollution.

Princess Anne at Anna Varsity

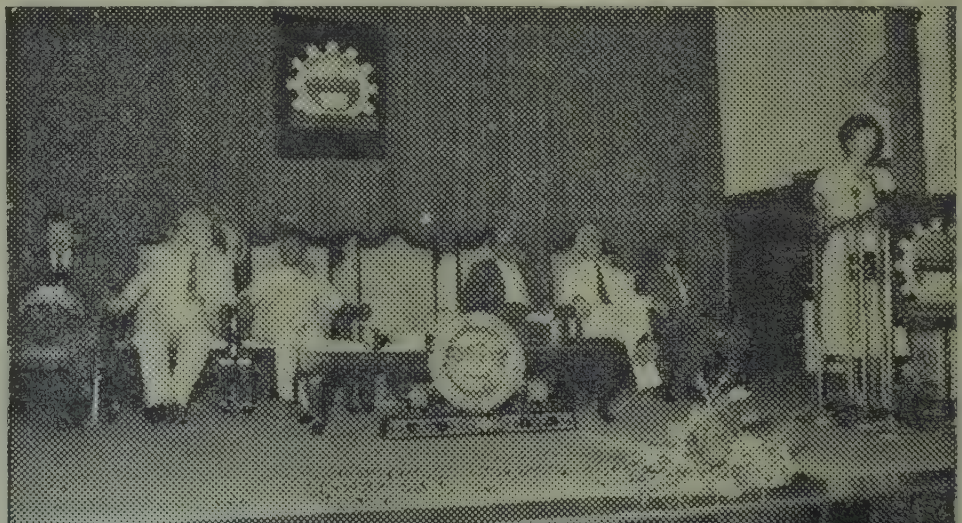
Her Royal Highness The Princess Anne, Chancellor, University of London, laid the foundation stone of the building for the newly introduced course on Printing Technology on 25th February 1985 at Anna University. In her address, she traced the connection of her country with the Survey School started in 1794 which has developed into a prestigious University by name Anna University. She added that the connection of her country with Anna University will be fostered further. Her Royal Highness stressed that the introduction of a Degree Course in Printing Technology is relevant inasmuch as Printing is a powerful media. The Princess added that two of the staff members of Anna University would be going soon to the London College of Printing.

In his presidential address, Dr. V.C. Kulandaiswamy, Vice-Chancellor, said that a consortium set up by the Printing industry in Madras assists Anna University in developing this course and has contributed an amount of Rs. 10 lakhs as a multi-purpose endowment. He added that a London based firm had offered to meet the local cost of training for one candidate every year. He informed the gathering that Anna University had an Academic Links Interchange Programme with the University of Birmingham and a similar programme with the University of Aston had been approved. A Professor from Britain and a Printing Technology expert are presently working in Anna University.

Her Royal Highness also visited the Centre for Water Resources and the School of Architecture and Planning on the campus. Sir Robert Wade-Gery, U.K. High Commissioner and Mr. T. Stubbas, British Deputy High Commissioner in Madras accompanied the Princess Anne.

U.G.C. Chairman visits Anna University

Dr. (Mrs.) Madhuri R. Shah, Chairman, University Grants



Princess Anne speaking at Foundation Stone Laying Ceremony at the Anna University.

Commission, inaugurated the Continuing and Development Education Hostel on 20th February 1985 at Anna University, Madras. In her inaugural address, she emphasised that management education should be a component of the curriculum of the engineering education. She also stated that the University Grants Commission will help Anna University in building a women's hostel.

Dr. V.C. Kulandaiswamy, Vice-Chancellor, in his presidential address pointed out that lack of hostel facilities is a constraint for admitting women students in engineering course not only in Anna University but in the State of Tamil Nadu as a whole.

Convocation of University of Jammu

The University of Jammu is holding its 5th Annual Convocation on 7th April 1985 in the forenoon. Shri R. Venkatraman, Hon'ble Vice-President of India has agreed to be the Chief Guest and deliver the convocation address.

His Excellency the Governor (Chancellor of the University) will preside. The Chief Minister will also grace the function. The convocation will be held on the lawns of the New Campus opposite M.A.M. College Jammu.

News from Agril. Varsities

Fourth Annual Workshop on Biological Nitrogen Fixation at Annamalainagar

Under the aegis of the Indian Council of Agricultural Research, the Fourth Annual Workshop on the All India Co-ordinated Research Project on Biological Nitrogen Fixation was held recently at the Faculty of Agriculture, Annamalai University. Prof. S.V. Chittibabu, Vice-Chancellor, who inaugurated the workshop, highlighted the need for co-ordinated efforts of agricultural scientists spread over the country in all their research projects which would bring about concrete and maximum benefits at minimum resources. Ultimately this type of 'lab-to-land adoptive research' would help to increase national productivity. Dialogue among scientists in the workshops of this kind would help them not only to review their research activities but also to chalk out the future programme of action for the benefit of the farming community.

Presiding over the function, Prof. A. R. Lakshmanan, Dean, Faculty of Agriculture, Annamalai University, stressed the need for the application of research work on biological nitrogen fixation at the field level to improve the crop yields. Dr. G. Rangaswami, former Vice-Chancellor of Tamil Nadu Agricultural University, and Chief Executive of M/s. Vorian Chemicals and Distilleries Ltd., Madras, in his special address, laid emphasis on the need for intensive research work in the biological nitrogen fixation as it offered a relatively cheaper source of nitrogen.

Dr. Velayudham, Assistant Director General (Soils), ICAR, in his address, referred to the utility of this research project to the agriculturists. Dr. N.S. Subba Rao, Head of the Division of Indian Agricultural Research Institute, who presented the project co-ordinator's report said that the Microbiology Department of Annamalai University has been recognised as one of the centres for biological nitrogen fixation by the ICAR and thanked the University for hosting the workshop.

The workshop was attended by Microbiologists from: (1) Indian Agricultural Research Institute, (2) Haryana Agricultural University, Hissar (3) Indian Institute of Science, Bangalore (4) Jawaharlal Nehru Krishi Vishwa Vidyalaya, Jabalpur, (5) University of Agricultural Sciences, Bangalore (6) Tamil Nadu Agricultural University, Coimbatore (7) Banaras Hindu University, Varanasi. (8) Pushpam College, Poondi, Thanjavur (9) Rubber Research Institute, Kottayam (10) International Crops Research Institute for Semi-Arid Tropics, (ICRISAT), Hyderabad (11) M.S. University, Baroda; and (12) Indian Council of Agricultural Research, New Delhi.

Special lectures on recent advance in Biological Nitrogen Fixation were also given at the workshop under the chairmanship of Dr. N.S. Subba Rao, Project Co-ordinator.

Pongal gift of TNAU

The Tamil Nadu Agricultural University released 16 new varieties of various crops and two strains in birds as 'Pongal Gift' for the farmers of Tamil Nadu for the year 1985. Among the new releases, two varieties are in rice, one variety each in sorghum, ragi, maize, cotton, greengram, sugarcane, cashew, papaya, snakegourd, pomegranate, rose and fennel and two varieties in chrysanthemum. These new varieties with higher yield potential with many other desirable attributes are expected to replace the existing local types and varieties in cultivation.

We Congratulate...

(1) Prof. G. Ram Reddy who has taken over as Officer on Special Duty for the proposed National Open University. He was previously Vice-Chancellor of the Andhra Pradesh Open University and earlier to that Vice-Chancellor of Osmania University.

(2) Dr. Y.P. Rudrappa who has been appointed Vice-Chancellor of the Mysore University.

(3) Dr. K.M. Safeeulla who has been appointed Vice-Chancellor of the Mangalore University.

News from UGC

INSAT 1-B Programme of UGC

Between 25th and 31st March, 1985, the following schedule of telecasts on higher education through INSAT-1B under the auspices of the University Grants Commission will be observed. The programme is of one hour duration every day from 12.45 p.m. to 1.45 p.m. (Repeated from 4 p.m. to 5 p.m.) and will be available on the TV network throughout the country. For the viewers in Delhi and surrounding areas, these programmes can be seen on the second channel.

25.3.85

"Plastics"
"A See We Cannot Sense"
"Electrochemistry in Action"

26.3.85

"Popymede-I"
"The Ecstasy of Flight-I"

27.3.85

"Learning to Help"
"Children of the Snow Country"
"Parasites"

28.3.85

"Digestion"
"Ishwarchand Vidyasagar"
"Emergency Measures at the Accident Site"

29.3.85

"Dispersal of Seeds"
"Secondary Classroom"
"Management Techniques"
"The Ecstasy of Flight-II"

30.3.85

"Domestic Refrigerators"
"Tomorrow's energy"
"Dehydration"
"Recycling"

31.3.85 **(Sunday)**

No Telecast

News from Abroad

Solar heating used for honey processing

A new application for the use of industrial solar heating has been developed in Western Australia (WA) for the heating of water up to 100°C (212°F) for use in honey processing.

The new system, developed at the University of Western Australia for the Honey Pool of WA, will replace an oil-fired boiler system. It comprises an array of 36 collectors covering an area of $127m^2$ (1371.6 sq ft), which will make an effective saving of about 35 per cent on total running costs and is expected to show a payback period of about six years.

Associate Professor Paul McCormick, of the University's Department of Mechanical Engineering, said the project represented a new application of industrial solar heating and had sparked interest from other commercial organisations which sought to adapt the system to their own needs. The system could be of great benefit in Third World countries, he said.

The Honey Pool is a producers' co-operative which processes and packages honey from members' apiaries.

[Courtesy : Agricultural Newsletter, Australian Information Service]

Educationists team from UK to visit India

A team from the "Committee for International Cooperation in Higher Education" (CICHE) in Britain is to visit India from March 23 to April 2, 1985. The team will familiarize itself with aspects of Indian Higher Education. It will hold discussions with the University Grants Commission.

CICHE was set up in 1980 following the incorporation of the Inter University Council in the British Council's Higher Education Division.

The team consists of Prof. J.B. Butterworth, Vice-Chancellor, University of Warwick and Chairman of CICHE, Sir Edward Parkes, Vice-Chancellor, University of Leeds and former Chairman of the UK UGC, Dr. David Harrison, Vice-Chancellor, University of Exeter and Mr Malcolm Dalziel, Controller, Higher Education Division, British Council, London and Secretary of CICHE.

New plant quarantine station at Faridabad

A senior technical officer from the plant quarantine branch of the Australian Department of Primary Industry (DPI) is helping establish buildings and services for a new post-entry quarantine station at Faridabad, near New Delhi.

Mr Desmond Wallace, a trained engineer specialising in the building and operation of plant quarantine equipment in Australia, is working on fumigation techniques and steam/air machines for seed sterilisation.

Australia will supply two plant houses with laboratory equipment and essential staff training for the Faridabad station. All the buildings will be pre-fabricated in Australia.

The assistant secretary of the plant quarantine branch of the DPI will visit India to inspect the Faridabad project and to conduct a feasibility study for the establishment of another station in Hyderabad.

Australia has been involved in quarantine establishment and training in India since 1976, it is reported.

[Courtesy : Australian Information Service, Agricultural Newsletter]

Fewer pupils want to study beyond Abitur in FRG

No more than 59.2 per cent of all pupils who are taking or who have already acquired their Abitur (Higher School Certificate) or Fachhochschulreife (Entrance qualification for Fachhochschule i.e. Polytechnics) definitely want to study. This is the finding of an inquiry recently published by the Federal Statistics Office in the Federal Republic of Germany. In 1972 more than 89 per cent were intent on following a course of studies. Since that time, the number of those wishing to enter university or college has been steadily declining. One reason for this development is the dwindling professional prospects for university graduates. The inquiry also revealed that among the young males approached, 67.2 per cent intended to study, i.e. a markedly higher percentage (as in the last few years) than in the case of the girls, of whom just under half, i.e. 49.6 per cent, expressed the desire to follow a course of study in higher education. 15.9 per cent stated quite definitely that they did not intend to study whilst the rest said they still didn't know. Because of the large number still undecided, the reliable forecast-value of the survey is a moot question among higher education experts in regard to subsequent, actual behaviour of these young persons and its effect on the stampede to higher educational institutes. When commenting on the results of the inquiry, Prof. Theodor Berchem, President of the West German Rectors (university principals) Conference, underscored the fact that questioning Abiturienten (holder of Higher School Certificate) did not provide an accurate reflection of subsequent behaviour in regard to university studies. Most of those who were undecided and followed an industrial training course initially, later turned up at higher education institutions. According to investigations by the Hochschul-Informations-System GmbH, four out of every five persons entitled to study enrolled at a university or college within the first five years after acquiring this entitlement.

[Courtesy : Bildung und Wissenschaft (BW)]

Sports News

Indian Universities Athletic Teams for Open Nationals

The following athletes have been selected as members of the Indian Universities Athletic team participating in the All India Open Athletic Championship being held at Trivandrum from 3rd-5th May, 1985.

Men

(1) Shri Soma Shekhran (Mysore Univ.); (2) Shri Sunil Rao (Bombay Univ.); (3) Shri Arun V. Rao (Mangalore Univ); (4) Shri Sebiraj Paul (Kerala Univ.); (5) Shri Roy P. Joseph (Kerala Univ.); (6) Shri Satya Narayan (Bangalore Univ.); (7) Shri Bhim Lal (Allahabad Univ.); (8) Shri Arvind Panna (Ranchi Univ.); (9) Shri M.V. Rajashekhar (Madras Univ.); (10) Shri Shashidharan K. (Calicut Univ.); (11) Shri Sukhvinder Mohan (Kurukshetra Univ.); (12) Shri Jude Vinent (Kerala Univ.); (13) Shri Hemant Kumar Patel (Sambalpur Univ.): (14) Shri Vijaya Pal Singh (H.A.U.); (15) Shri Ramphal (M.D.U., Rohtak); (16) Shri Vikram Singh (Banaras Hindu Univ.); (17) Shri A. Armugam (Bharathiar Univ.); (18) Shri Eashan S.D. (Bangalore Univ.); (19) Shri Avtar Singh (Guru Nanak Dev Univ.); (20) Shri Surjit Singh (Guru Nanak Dev Univ.); (21) Shri Kanwalpreet Singh (Punjabi Univ.); (22) Shri Jaibir (M.D.U., Rohtak); (23) Shri Jasbir Singh (Guru Nanak Dev Univ.); (24) Shri Ajai Pal Singh (Kurukshetra Univ.); (25) Shri Ranjeet Singh (Meerut Univ.); and (26) Shri Sant Dev (Delhi Univ.).

Women

(1) Kumari Hema Venkat Raman (Bangalore Univ.); (2) Kumari Pushpa Nachappa (Bangalore Univ.); (3) Kumari Jeena K. (Calicut Univ.); Kumari Alleyamma N.V. (Jiwaji Univ.); (5) Kumari Beena Peter (Calicut Univ); (6) Kumari Charulata Nagaonkar (Nagpur Univ.); (7) Kumari Poonam Taneja (M.D.U. Rohtak); (8) Kumari Meena Gopal (Madras Univ.); (9) Kumari Alsama Joseph (Calicut Univ.); (10) Kumari Nanay P. Thomas (Gandhiji Univ.); (11) Kumari Mini Mol Thomas (Calicut Univ.); (12) Kumari Shirley Verghese (Kerala Univ.); (13) Kumari Elizabeth Mathai (Gandhiji Univ.); (14) Kumari Gurmeet Kaur (Guru Nanak Dev Univ.); (15) Kumari M. Laxmi Rajayam (Osmania Univ.); and (16) Kumari Yasmin Saiffudin (Madras (Univ.).

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AIU Library

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The Library also receives about a 100 periodical titles on Higher Education. All these are indexed regularly and a select list appears every month as 'Current Documentation in Education'.

Doctoral Degrees awarded during the preceding month are reported as 'Theses of the Month' while registrations made for such degrees are flashed as 'Research in Progress'. Bibliographies are also compiled and supplied on demand.

Research scholars and students of education are welcome to use these resources. The Library is situated at 17-B, Indraprastha Marg, New Delhi-110 002. It is open from 10 a.m. to 5 p.m. Monday through Saturday except Second Saturday. Access can also be had through inter library loan for which requisition must be made through your Librarian.

THESES OF THE MONTH

A list of Doctoral Theses Accepted by Indian Universities

BIOLOGICAL SCIENCES

Anthropology

1. Shakuntla. *The study of genetic variablity among the 'banias of Delhi, India.* U Delhi.

Marine Biology

1. Sabharwal, A.K. *Persistence of organophosphates in aquatic ecosystem(s).* Bhopal U.
2. Unnikrishnan Nair, N. *Studies on the backwater oyster, Crassostrea madrasensis Preston of Cochin harbour.* U Cochin.

Microbiology

1. Bhalla, Tek Chand. *Studies on plant endoplasmic reticulum.* Pb U, Chandigarh.
2. Mukhopadhyay, Kanak Kumar. *Studies on Japanese encephalitis virus with special reference to the* 1973 *epidemic in West Bengal.* U Calcutta.
3. Shrivastav, Neena. *Investigations on microbial lipase.* U Calcutta.
4. Som, Triptilal. *Studies on lymphadenitis in sheep and goats.* U Calcutta.

Biochemistry

1. Das, Arabinda. *Effect of drugs at the macromolecular level in mouse ascites cells.* U Calcutta.
2. Das, Sumantra. *Comparative studies on the biochemical changes during morphine and acupuncture treatments in animals.* U Calcutta.
3. Kawalkar, V.N. *Nutritional and biochemical studies on chicken with special reference to Karaknath variety.* Bhopal U.
4. Muralidhar, K. *Acute metabolic effects of taurine on rat brain.* OU, Hyderabad.
5. Nagpaul, Joginder Paul. *Studies on certain xenobiotics Effects of* (a) *steroidal contraceptives in protein deficient rats* (*b*) *isatin in normal rats on intestinal functions and hepatic drug metabolizing enzymes.* Pb U, Chandigarh.
6. Narasimha Chari, Suresh. *Certain biochemical alterations of human polymorphonuclear leukocytes in diabetes mellitus.* Nagpur U.
7. Venkatanarayana, S. *Studies on the utilization of ragi, Eleusine coracana in brewing.* U Mysore.

Botany

1. Bhagavathi, Teli. *Karyotoxicity of fungicides in the Allium test: An agricultural perspective.* Andhra U, Waltair.
2. Bhaskara Rao, Vijaya. *Embryological studies in some forage grasses.* Andhra U, Waltair.
3. Bhuvanendran Nair, D. *Morphactin regulated growth and development in garlic and onion.* SPU, Vallabh Vidyanagar.
4. Gunnery, Shobha. *Translational control in berley embryes.* JNU, Delhi.
5. Jaiwal, Pawan Kumar. *Studies on the effect of certain growth substances on the morphology of some important leguminous crops.* Kurukshetra U.
6. Kalyani, Y. *Studies on fruit development in some tropical grain legumes.* U Delhi.
7. Kulkarni, Shamsundar Shankar. *Hyphomycetes producing basauxic conidiophores.* OU, Hyderabad.
8. Mishra, Indra Prasad. *Investigation on chemical weed control and mulch on the growth, yield and quality characteristics of onion, Allium cepa L.* RDV, Jabalpur.
9. Mishra, Shyamnarayan. *Role of nitrogenous salts in the metabolism of nitrogenous macromolecules in maize leaves.* Devi Ahilya, Indore.
10. Mukhopadhyay, Manisha. *Studies on the allelochemic properties of constituents of Indian plants.* U Calcutta.
11. Nageswara Rao, Abbareddy. *Studies on the family orchidaceae of Arunachal Pradesh, India.* Andhra U, Waltair.
12. Narsimha Reddy, B. *Toxicological and mycological studies on sorghum with special reference to pests and aeromycoflora.* OU, Hyderabad.
13. Sharma, Pardeep Kumar. *Cytogenetic studies on some Himalayan species of genus Plantago L.* U Jammu.

14. Sheopuria, Rajaram. *Genetics of economic traits in wheat; T. durum Desf.* RDV, Jabalpur.

15. Tadikonde, Mohankrishan. *Growth patterns and manganese changes in plants.* Devi Ahilya, Indore.

16. Venkateswara Rao, Bandaru. *Studies on the genotoxicity of environmental agents merristem assays.* Andhra U, Waltair.

17. Venkateswara Rao, Yechuri. *Studies on the interspecific crossability relationships of Solanum pubescens with six other nontuberiferous (spinous) Solanum species.* Andhra U, Waltair.

18. Yalvigi, V.S. *Studies on the algae of cultivated soils of Bangalore District.* Bangalore U.

Zoology

1. Bharathi, Chalasani. *Studies on the effects of organophosphate insecticides 'phosphmidon, monocrotophos and dichlorvas' on some aspects of physiology of the earthworm, Lampito mauritii Kinberg.* Andhra U, Waltair.

2. Dalwani, Rooprekha. *Effect of cadmium at sublethal levels on fresh water fish, Channa punctatus.* JNU, Delhi.

3. Das, Sandhya. *Studies on the root-lesion nematode, Pratylenchus sp. affecting banana.* Utkal U, Bhubaneswar.

4. Deshmukh, Bhaskar Dadarao. *Radiation inducted alterations in carbohydrate metabolism in the rain quail, Coturnix coromandelica Gmelin.* Nagpur U.

5. Gupta, Prabhakar. *Studies on the fine structures of the chromosomes in domestic mammals.* Calcutta U.

6. Jaffer, Noor Jahera. *Physiological and biochemical studies on some effects of alloxan induced diabetes in the brain of rats.* Bangalore U.

7. Kamal Jeet Kaur. *Cytological studies on some species of rotifers along with analysis of some histochemical and biochemical aspects.* Kurukshetra U.

8. Maddi, Priyadarshini P. *Studies in the silkworm, Bombyx mori L.: Some aspects of neurochemistry and mutagenesis.* Bangalore U.

9. Saini, Sandhya. *Hypothalamo-hypophysial neurosecretory system in some fresh water fishes with special reference to the vascularisation.* HS Gour, Sagar.

10. Shashi Kiran. *Histophysiological studies of the myotomal muscles of certain fresh water teleosts under normal and experimental conditions with special reference to m-ATPase and light chains.* U Delhi.

11. Sita, V. *Studies on certain steroids as development inhibitors and chemosterilants on some insects of agricultural and medical importance.* OU, Hyderabad.

12. Uppal, Shobha Kumari. *Ecological studies of soil litter arthropods in a forest stand.* Kurukshetra U.

13. Verma, Sidh Nath. *The studies on the coccinellid predators with the view to utilize them in the integrated control of vegetable aphids.* RDV, Jabalpur.

14. Vijayabharathi, Pendurthi. *Reproductive biology of female albino rats with particular reference to ovulation retardation and correlated biochemical changes observed by using a few selected homoeopathic drugs and a natural product.* OU, Hyderabad.

Medical Sciences

1. Gupta, Chanan. *Bilateral asymmetry in the density of bone.* U Delhi.

2. Mohankumar, K.P. *Effect of narcotic drugs on the enzymatic make-up of the central nervous system of mice: Studies with morphine and naloxone.* Saur. U, Rajkot.

3. Radha, Vegesna. *Genetic and biochemical studies in peptic ulcer.* OU, Hyderabad.

4. Seshagiri Rao, Akella. *Solubilization and stability kinetics of steroidal drugs.* Andhra U, Waltair.

Agriculture

1. Bhupinder Kaur. *Canning, dehydration and freeze preservation of okra, Hibiscus esculentus L. cultivars of different maturity in relation to the composition and product quality.* PAU, Ludhiana.

2. Choudhury, Subodh Kumar. *Integrated weed management in vegetable multiple cropping-ladies finger, radish, potato and onion.* RAU, Samastipur.

3. Jaspal Singh. *Pedogenesis of soils under paddy in Punjab.* PAU, Ludhiana.

4. Krishan Kumar. *Chemical, physical and biological control of seed-borne infection of mungbean, Xanthomonas phaseoli f. sp. Vigna radiatae and cowpea, Xanthomonas phaseoli f. sp. vignicola.* PAU, Ludhiana.

5. Pandeya, Satyabrat. *Equilibria of natural chelates in relation to iion nutritron of plants in calcareous soil.* RAU, Samastipur.

6. Prasher, Mohinder Partap. *Factors affecting survival and seed transmission of phytopathogenic bacteria associated with mungbean and cowpea seeds and eradication of seed borne inoculum.* PAU, Ludhiana.

7. Seth, Anju. *Studies on the incidence, pathogenecity biology and control of Aphelenchoides species associated with mushroom.* HP Krishi, Palampur.

8. Sharma, Sushil Kumar. *Studies on bitter rot of pear caused by Glomerella cingulata (Ston) Spauld and Schrenk and its control.* HP Krishi, Palampur.

9. Shinde, Appasaheb Ganpatrao. *Comparative study of methods of planting varying plant densities, graded levels of nitrogen and maintenance of tillers on the growth, yield and quality of seasonal sugarcane, Saccharum officinarum Linn. CV.CO. 740. MP Krishi* Rahuri.

10. Singpuri, Manoj Kumar. *Sorption of phosphorus in soils of Bihar.* Birsa Agrl., Ranchi.

Veterinary Science

1. Harash Vardhan. *Epidemiology and pathogenesis of Leptospira infection in animals.* HAU, Hissar.

2. Kamble, Vilas Jaichandrao. *Studies on growth and meat potentialities of osmanabadi goat.* Marath Krishi, Parbhani.

3. Kulkarni, Madhukar Baban. *Studies on chemical composition and utilization of chakka whey.* MP Krishi, Rahuri.

4. Maity, Nimai Kumar. *Studies on certain aspects of adrenergic mechanisms in the oviduct of chicken.* HAU, Hissar.

5. Sukhija, Surinder Singh. *Studies on certain morphological and biochemical changes in buffalo spermatozoa during freeze preservation.* HAU, Hissar.

CURRENT DOCUMENTATION IN EDUCATION

A list of select articles culled from periodicals received in AIU Library during February, 1985

EDUCATIONAL PHILOSOPHY

Ritscher, Hans. Education, culture and responsibility. *Education* (30), 1984, 113-27.

Sen, Biman. Education for one world: A long-term perspective. *Univ News* 23(7), 16 Feb, 85, 3-6.

EDUCATIONAL PSYCHOLOGY

Baird, Leonard L. Predicting predictability: The influence of student and institutional characteristics on the prediction of grades. *Res Hr Edn* 21(3), 1984, 261-79.

Pandey, Sarla Kuari and Upadhyay, Rajeshwar. Degree of the sense of responsibility in relation to some socio-economic variables. *Progress of Education* 59(7), 1985, 150-56.

EDUCATIONAL SOCIOLOGY

Fry, Gerald W. The economic and political impact of study abroad. *Comp Edn Rev* 28(2), 1984. 203-20.

Lang, Dwight. Education, stratification, and the academic hierarchy. *Res Hr Edn* 21(3), 1984, 329-52.

Poggeier, Franz. The teacher's ethos: A reappraisal. *Education*, (30) 1984, 33-40.

Sekar, C. Indiscipline among students: An analysis of contributing factors. *J Indian Edn* 10(1), 1984, 32-9.

Yadava, Promila. Educational inequality: A theoretical explanation. *J Indian Edn* 10(1), 1984, 13-17.

EDUCATIONAL PLANNING

Ashraf Ali. Educational planning. *Univ News* 23(8), 23 Feb, 85, 7-9.

Powers, David W. and Powers, Mary F. How to orchestrate participatory strategic planning without sacrificing momentum. *Ednl Record* 65(4), 1984- 48-52.

Saraf, S.N. Higher education and five year plans: Policies, plans and perspectives. *Univ News* 23(3), 16 Jan, 85, 2-5.

Saraf, S.N. Higher education and five year plans: Politics, plans and perspectives. *Univ News* 23(4), 23 Jan, 85- 2-6.

Saraf, S.N. Higher education and five year plans: Politics, plans and perspectives. *Univ News* 23(5), 1 Feb, 85, 2-4.

EDUCATIONAL ADMINISTRATION

Scheuerl, Hans. Some considerations on the justification of educational decisions. *Education* (30), 1984, 21-32.

Slaughter, Sheila. From serving students to serving the economy: Changing expectations of faculty role performance. *Hr Edn* 14(1), 1985, 41-56.

CURRICULUM

Ediger, Marlow. Philosophy in the science curriculum. *J Indian Edn* 10 (1), 1984, 27-31.

TEACHING

Jourdan, Manfred. Communicative competence of the educator and the educatee. *Education* (30), 1984, 74-91.

Mehdi, Baqer. Revamping teacher education programme at the B.Ed. level. *J Indian Edn* 10(1), 1984, 18-26.

Moses, Ingrid. Academic development units and the improvement of teaching. *Hr Edn* 14(1), 1985, 75-100.

TECHNOLOGY

Masland, Andrew T. Encouraging innovative academic computing. *Ednl Record* 65(4), 1984, 36-41.

EVALUATION

Difficulty in tracking down the forgery factories. *THES* 639, 1 Feb, 1985, 12.

PROFESSIONAL EDUCATION

Mukherjee, Bibha and Mukherjee, Kanai L. Vocational education in India: A new strategy. *J Indian Edn* 10(1), 1984, 58-61.

ECONOMICS OF EDUCATION

Bhatnagar, K.N. Management and financing of higher education. *Univ News* 23(6), 8 Feb, 85, 2-4.

Jha, L.K. Role of education in economic development. *Mainstream* 23(28), 9 March, 85, 13-5.

Natarajan, N. Delinking degrees from jobs. *Univ News* 23(7), 16Feb, 85, 2,6.

Padmanabhan, C.B. Is financing Indian higher education equitable? *Univ News* 23(8), 23 Feb, 85, 25-7.

Ramadass, M. Public expenditure on education: A cost benefit exercise. *J Indian Edn* 10(1), 1984, 1-12.

ADULT EDUCATION

Lenhart, Volker. Education alternatives in the third world. *Education* (30), 1984, 7-20.

COMPARATIVE EDUCATION & COUNTRY STUDIES

Cummings, William K. Going overseas for higher education: The Asian experience. *Comp Edn Rev* 28(2), 1984, 241-57.

El-Agraa, Ali. M and Ichii, Akira. The Japanese education system with special emphasis on higher education. *Hr Edn* 14(1), 1985, 1-16.

Jha, L.K. Towards excellence, equity and productivity education. *Univ News* 23(8), 23 Feb, 85, 13-5.

Oduleye, S.O. Decline in Nigerian Universities. *Hr Edn* 14(1), 1985, 17-40.

Sharma, B.D. A centre of excellence in the North-East-NEHU. *Univ News* 23(8), 23 Feb, 85, 2-4.

Smith, Patricia. A revolutionary growth. *THES*, 639, 1 Feb, 85, 8.

Whilehead, John S. The democratization of Danish higher education: Causes, responses and adaptations. *Hr Edn* 14(1), 1985, 57-73.

Williams, Peter, Britain's full-cost policy for overseas students. *Comp Edn Rev* 28(2), 1984, 258-78.

CLASSIFIED ADVERTISEMENTS

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(b) An M.Phil degree or a recognised degree/diploma beyond the Master's level or equivalent published work.

Non-Teaching Posts

3. **Care Taker** : (Pay scale Rs. 525-1050).

Qualifications

(i) At least a Graduate with general awareness.

(ii) Some office experience.

(iii) Record of extra-curricular activities during student days.

(iv) Age : Not above 35 years and not below 25 years.

Note

All qualifications except the educational qualification are relaxable in suitable cases.

4. **Laboratory Technician in Bio-Sciences Deptt.** (Pay Scale : Rs. 525-1050).

(i) Diploma in Electrical Engineering.
(ii) Atleast two years practical experience.

5. **Photographer-cum-Artist in Bio-Sciences Deptt.** (Pay Scale Rs. 525-1050).

(i) Diploma in photography.

(ii) At least one year practical experience.

6. **Canteen Supervisor** : (Pay Scale : Rs. 400-660+Rs. 50/- special pay)

"Graduate, having diploma in Hotel Management, Catering and Nutrition with some experience of the line".

7. **Jr. Store Keeper** (Geography Deptt.) (Pay Scale Rs. 400-660).

Qualifications

B.A./ B.Sc. with Geography as one of the papers at the graduate level. The candidate should have at least two years' experience as Store-Keeper of a University level Lab. or equivalent thereof.

Allowances and benefits of C.P.F. for all teaching and non-teaching posts admissible as per University rules. Reservation for ex-servicemen B.C./S.C./S.T. candidates as per rules and no application fee from them. Higher start admissible in deserving cases. Knowledge of Hindi essential for all posts. Qualifications relaxable for internal candidates for non-teaching posts only. Number of posts is liable to be increased or decreased.

Applications for posts mentioned at Sr. No. 1 & 2 are to be submitted on the form prescribed for class 'A' officers and for the remaining posts on the form prescribed for other than class 'A' officers, alongwith attested testimonials and crossed postal order(s) for Rs. 10/- in favour of Chief Accounts Officer payable at the Post Office, Rohtak. The application complete in all respect should reach the Registrar of the University by **31st March, 1985**. Separate application form must be used for each post. The application form can be had from the Assistant Registrar (General) on payment of Rs. 2/- at the counter and Rs. 3/- by ordinary post.

REGISTRAR

INDIAN INSTITUTE OF SCIENCE

BANGALORE-560012

Advertisement No. R(IA)308-9/85
Dated : 9th March, 1985

Applications are invited for the post of Registrar in the Institute. The grade for the post hitherto has been Rs. 1500-60-1800-100-2000, which is being revised to Rs. 1500-60-1800-100-2000-125/2-2500. In addition, allowance at Central Government rates will be available. The emoluments at the minimum of the scale will be Rs. 2915/-, excluding house rent allowance. The Registrar will be entitled to a house on the campus, for which rent and other charges will have to be paid as per rules.

The Institute is a premier all-India institution devoted to research and postgraduate education in science and technology and has active links with industry. The Registrar is essentially the chief of administration in the Institute and is mainly responsible for personnel management and legal matters. He is also the *ex-officio* Secretary of the Court and the Council. He is called upon to render such assistance as the Director of the Institute may require of him, in the discharge of his duties.

QUALIFICATIONS

Essential

Graduate from a recognised university, with 10 years experience in administration and personnel management in an institution of standing.

Desirable

Knowledge of legal matters; and experience as a teacher in an educational institution or as an administrator in an establishment dealing with science and technology.

Normally, all new appointments at the Institute are made on contract for periods of five years, including an initial probationary period of one year. However, it is open to the authorities to consider continuing appointments till the age of superannuation. In the latter case, the period of probation will be two years.

Higher starting salary may be considered in the case of candidates with exceptional merit.

Application form (six copies) can be obtained from the Registrar, Indian Institute of Science, Bangalore-560012 on requisition accompanied by a crossed Indian Postal Order for Rs. 5/- (non-refundable) made payable to the Registrar, Indian Institute of Science, Bangalore, together with a self-addressed stamped (Rs. 3.30) envelope of the size of 28 cms× 18cms. The payment of application fee is exempted in the case of Scheduled Caste/Scheduled Tribe candidates on production of certificate from a competent authority.

The last dates are

(a) For issue of application forms: **30th March, 1985.**

(b) For receipt of completed application forms: **15th April, 1985.**

Applicants in the service of government, quasi-government, government-aided or similar institutions should apply through proper channel. Otherwise, their application will not be considered.

Detailed terms and conditions of appointment will be supplied along with the application forms.

REGISTRAR

UNIVERSITY OF GORAKHPUR

GORAKHPUR

No. 18899/Gen.(Adm.)/85
Dated : 13-3-1985

Corrigendum of Advertisement No. 7

1. Permanent Lecturers: Statistics may be read as temporary.

2. Last date in respect of all advertised posts only is extended upto **March 30, 1985** in place of March 15, 1985.

B.S. Gupta
REGISTRAR

UNIVERSITY OF ROORKEE

ROORKEE

ADVERTISEMENT NO. ESTT(A)/26/2/85-A-86(Advt.) **Dated Feb. 26, 1985**

Applications on prescribed form, obtainable from the Registrar either personally or by sending a self addressed envelope (9″ × 4″) affixed with 1.10 paise stamps, are invited for the following posts. The prescribed qualifications may be relaxed for candidates with exceptional research/industrial experience. Higher starting salary could be offered to candidates depending on their qualifications and experience. Applicants should generally not be above 55 years. Candidates in employment are required to send their applications through proper channel. Applications received late /incomplete or without required remittance will not be entertained.

Last date for receipt of complete applications on prescribed form along with application fee of Rs. 10/- (by Bank draft or Indian Postal Orders in favour of the Registrar, University of Roorkee) is **27-4-1985** and **18-5-1985** for overseas candidates.

S. No.	*Department*	*Professor* (1500-2500)	*Reader* (1200-1900)	*Lecturer* (700-1600)
	Engineering Departments			
1.	Civil	3T	2T	8R+4T
2.	Electrical	2R	1R+1TLR	2R+5T
3.	Electronics & Comm.	1R	1R	2R
4.	Mechanical & Indl.	1R	1R+2T	—
5.	University Service & Instrumentation Centre	—	1TLR	—
6.	Water Resources Dev. Training Centre	1T(upto April 86)	—	—
	Science Departments			
1.	Biosciences	—	1R	—
2.	Chemistry	1R+ 1TLR	1R+1T	1R
3.	Earthsciences	1R	2TLR	2R+1 TLR+ 1T(upto April 86)
4.	Physics	1T	2R	—

Other Posts

1. Pathologist : 1T : Rs. 850-1720
2. Assistant Suptd. Workshop : 2 R : Rs. 850-1720
3. Cameraman (Audio Visual Research Centre) : 1T : Rs. 770-1600

Qualifications for Engineering Departments

Professor

Essential

(a) A Doctor's degree and published work of hign standard. (b) Consistently good academic record with at least I class at Master's or Bachelor's level. (c) Experience in guidance of research. preferably at Ph.D. level (d) 12 years' experience of teaching/research/design/and industry in appropriate field with at least 5 years in teaching/research.

Desirable : (a) Teaching experience in an Institution of University level. (b) Specialised industrial experience in the appropriate field.

Reader

Essential : (a) A Doctor's degree OR A Master's degree with published work of high standard. (b) Consistently good academic record with at least I Class at Master's or Bachelor's level. (c) 7 years' experience of teaching research/design and industry in appropriate field with at least 2 years' experience in teaching/research.

Desirable : (a) Experience in guidance of research (b) Teaching experience in an Institution of University level. (c) Published research work.

Note : A candidate selected for Reader's post who does not hold a Ph.D. must acquire the same within 5 years of his appointment failing which he will cease to draw the annual increment until he acquires the Ph.D. degree.

Lecturer

Essential : (a) A Master's degree (b) Consistently good academic record with I class at Bachelor's degree and/or Master's degree level. (c) One year's relevant Professional experience outside academic/research Institutions.

Note : 1—A Candidate selected for teacher's post who does not hold a Ph.D. must acquire the same within 7 years of his appointment failing which he will cease to draw the annual increment until he acquires the Ph.D. degree.

2. Provided further that if a candidate does not possess professional experience or a person possessing such experience is not found suitable, the person appointed will be required to obtain desired professional experience within a period of 5 years of his appointment failing which he will not be able to earn future increments, until he fulfils this requirement.

Qualifications for Science Departments

Professor

Essential : (a) A Doctor's degree and published work of high standard. (b) Consistently good academic record with at least I class at Master's or Bachelor's level. (c) Experience in guidance of research, preferably at Ph.D. level. (d) 12 years' experience of teaching/research.

Desirable : (a) Teaching experience in an Institution of University level.

Reader

Essential : (a) A Doctor's degree (b) Consistently good academic record with at least I class at Master's or Bachelor's level. (c) 7 years' experience of teaching/research/design and Industry in appropriate field with at least 2 years' experience in teaching/research.

Desirable : (a) Published research work. (b) Experience in guidance of research (c) Teaching experience in an Institution of University level.

Lecturer

Essential : (a) A Doctor's degree (b) Consistently good academic record with at least I Class at Master's or Bachelor's level.

Desirable : (a) Teaching experience in an Institution of University level.

Note

If a candidate for Lecturer's post possessing a Doctor's degree or equivalent published work is not available or is not considered suitable, a person possessing a consistently good academic record (due weightage being given to M.Phil. or equivalent degree or research work of quality) may be appointed on the condition that he will have to obtain a Ph.D. degree within 7 years of his appointment failing which he will not be able to earn future increments until he fulfills these requirements.

Qualifications for other Posts

1. Pathologist

M.B.B.S. with 2 years' experience. Post graduate qualification in Pathology M.D. or D.C.P.

2. Cameraman (AVRC)

Essential : (a) Matriculation or equivalent (b) Diploma or degree in Cinematography from a recognised institute.

Desirable : (a) 3 years' experience in motion picture/T.V. (Video) Photography.

(The experience requirement is relaxable under exceptional cases).

3. Asstt. Supdt. Workshop

Essential : A Master's degree in Mech./Production/Industrial Engineering with at least one years' shop floor experience OR A Bachelor's degree or equivalent in Mech./Prod./Indl. Engg. with 5 years experience, out of which at least 2 years should be shop floor experience and minimum of 2 years' teaching experience of subjects related to workshop Tech. at University level.

Desirable: Administrative experience of Engineering Workshop.

R=REGULAR TLR=TEMPORARY LIKELY TO BE REGULAR T=TEMPORARY

NOTE : 1—Other details required for various posts alongwith specialisation will be supplied alongwith application forms.

2—Number of posts shown above may change at the time of selection.

Dr. O.N. Chaturvedi
REGISTRAR

ZAKIR HUSAIN (EVENING) COLLEGE

AJMERI GATE, DELHI-110006

Applications are invited for the following permanent posts:

1. Lecturer in Mathematics : 700-1600
2. Lecturer in Commerce : 700-1600
3. Director of Physical Education : 700-1600

Qualifications for Lecturers

(a) Doctorate Degree or Research work of equally high standard.

(b) Good academic record with at least second class (C in seven point scale), Master's Degree in the subject concerned. Having regard to the need for developing inter-disciplinary programmes. The Degree in (a) & (b) above may be in relevant subject. PROVIDED that if the Selection Committee is of the view that the research work of a candidate as evident either from his/her thesis or from published work is not considered suitable, a person possessing a good academic record (weightage being given to M.Phil. or equivalent degree or research work of quality) may be appointed provided he/she has done research work for at least two years or has practical experience in a research lab/organization on the condition that he/she will have to obtain a Doctor's Degree or give evidence of research of high standard within eight years of appointment failing which he/she will not be able to earn future increments until the aforesaid requirements are fulfilled.

Application forms available with College Office, between 5 and 8 p.m. on working days.

Qualifications for D.P.E.

(1) Master's Degree in Physical Education (high 2nd Class) with Diploma in Sports Coaching from a recognised institution, OR Master's Degree in Physical Education (High 2nd Class) with the record of having represented his University at Inter-University level or State in National Championship.

(2) Experience in organizing Games/Sports (as exemplified in handling of about half of a dozen teams in a year in his institution and their participation in University/Inter-College tournaments) and ability to encourage mass participation in games/sports.

SELF-WRITTEN applications with complete information such as Name, Father's Name, Age, Sex, Exams. passed (from H. School/Hr. Sec. to M.A./M.P. Ed etc.) with %ages and name of University and also the experience should be sent.

APPLICATIONS should reach the Vice-Principal-Incharge within 10 days of the appearance of this advertisement.

Those called for interview from outstations may be paid single one-way Railway Fare on production of Railway Receipt/Ticket.

Those who applied in response to earlier advertisements for the posts in August/October 1984 need not apply. Their old applications will be considered without a fresh request.

RANI DURGAVATI VISHWAVIDYALAYA

JABALPUR

No. Estt/85/389
Dated : 4-3-1985
Advertisement

Applications in the prescribed form (in 8 copies) are invited for the following posts so as to reach the undersigned on or before **18-4-85.**

1. One Reader in History (Medieval Indian History) in the Scale of Pay Rs. 1200-50-1300-60-1900.

2. One Lecturer in History (Modern Indian History) in the Scale of Pay Rs. 700-40-1100-50-1600.

3. The minimum essential qualifications for these posts are exactly the same as are prescribed by the University Grants Commission.

4. The prescribed application forms (in 8 copies) together with details of qualifications, specialization, etc. can be obtained from the undersigned on payment of Rs. 5/- in person or by sending a crosed postal order of Rs. 5/- payable to the Registrar, Rani Durgavati Vishwavidyalaya, Jabalpur. The candidates who desire to get the application forms by Registered post (not by ordinary post) should send an additional amount of Rs. 5/- by postal order for postal expenses.

5. The University reserves the right to fill in or not to fill in any post and also to call any candidate for interview.

R.N. Tripathi
REGISTRAR

Printed & Published by M. S. RAMAMURTHY, on behalf of the Association of Indian Universities,
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University News

APRIL 1, 1985

Re. 1.00

Food Science & Technolog
Information Service
15 APR 1985
C.F.T.R.I., MYSORE

- COVAP Meets at New Delhi
- Problems of Students Discipline
- Five Do's for Youth
- Annamalai Seminar on Three Vital Topics
- Biotechnology Course at Poona

CLASSIFIED ADVERTISEMENTS

INDIAN INSTITUTE OF SCIENCE

BANGALORE-560012

Advertisement No. R(IA)308-11/85

Dated : 18th March, 1985

Applications in the prescribed form are invited for the post of SYSTEMS PROGRAMMER in the School of Automation at the Institute in the grade Rs. 700-40-1100-50-1300, plus allowances at Central Government rates prevailing at the Institute from time to time. Emoluments at the minimum of the scale total to Rs.1927.95 per month (including House Rent Allowance).

Qualifications and Experience

Essential

M.E. in Automation or Computea Science/Engineering of related areas with exposure to concepts in Systems Programming and Programming Languages.

Desirable

(i) Experience in Programming in PASCAL/C/MODULA Languages.
(ii) Knowledge of PDP/11 Systems.
(iii) Experience in Systems Programming—teaching and/or Programming work.
(iv) Exposure to Digital Systems Hardware.

Job Description

(i) Scheduling and Running the PDP/11-AD/5 Hybrid Computer Facility;
(ii) Developing and maintaining Systems Programs;
(iii) Assistance to In-charge, Computer Facility in Augmentation and expansion plans;
(iv) Assistance in maintenance of the System
(v) Participation in teaching to users and in academic programmes; and
(vi) Any other duties assigned from time to time.

Relaxation

The stipulation regarding the relevant experience is relaxable at the discretion of the competent authority in the case of candidates possessing excetionally good record and outstanding capabilities.

Tenure of Appointment

Normally, all new appointments at the Institute are made on contract for periods of five years including an initial probationary period of one year. If, at the end of the first contract, the work and progress of the candidate is found satisfactory, the Institute may consider offering a continuing appointment till the age of superannuation, i.e. 60 years.

General

Application forms (six copies) can be obtained from the Registrar, Indian Institute of Science, Bangalore-560012, on requisition, Each request for application forms should be accompanied by a crossed Indian Postal Order for Rs. 5/- (non-refundable) made payable to the Registrar, together with a self-addressed stamped (Rs. 3.30) envelope of the size of 28cms× 18cms. The payment of application fee is exempted in the case of candidates belonging to Scheduled Castes/Scheduled Tribes on productiion of certificate from a competent authority.

The last dates are:

(a) For issue of application forms: **22-4-1985.**

(b) For receipt of completed application forms : **6-5-1985.**

Applicants in the service of Government, quasi-Government, Government-aided or similar institutions should apply through proper channel. Otherwise, their applications will not be considered.

It shall be open to the Selection Committee for a higher post to recommend a person for a lower post if a suitable candidate for the higher post is not available.

Due consideration will be given to candidates who are physically handicapped provided they are academically/scientifically sound and well qualified and generally comparable to others.

Higher starting salary may be considered to candidates with exceptional merit.

Kindly quote the advertisement No. and date in all correspondence. Candidates should ensure that applications are complete in all respects.

Detailed terms and conditions of appointment will be supplied along with the application forms.

REGISTRAR

MANGALORE UNIVERSITY

LIGHT HOUSE HILL

MANGALORE-575 003

No. EST(1) CR 33/83-84

Dated : 21st March 1985

Notification

The last date for receipt of application for various Teaching and Non-Teaching posts advertised in this Office Notification dated 6-2-85 is extended upto **10-4-1985.**

REGISTRAR

OSMANIA UNIVERSITY

HYDERABAD-500007, (A.P.)

ADVERTISEMENT No. 3/85

Dated : 18 March, 1985

Applications in the prescribed form together with the registration fee of Rs. 5/- (non-refundable) payable through Demand Draft/Indian Postal Order drawn in favour of Registrar, Osmania University are invited for the following posts in the University Service so as to reach the undersigned on or before **18-4-1985:**

1. Chief Project Co-ordinator/Professor of Applied Geochemistry .. One
(Rs. 1500-2500)
2. Scientists/Lecturers .. Five
(Rs. 700-1600)

Age

Not above 50 and 35 years respectively.

Age limit does not apply to the employees of this University.

Relaxation in age to the extent of five years shall be granted to the candidates belonging to BC/SC/ST.

25%, 14% and 4% reservations are made respectively for the post of Scientists/Lecturers belonging to BC/SC/ST.

Application forms can be had from the Director, Department of Publications and Press, Osmania University, Hyderabad-500007, AP on payment of Rs. 4.50 in person or by IPO/D.D. together with postal charges for ordinary registered post made payable to the Director and by sending a self addressed envelope of 14¼× 26¼ cms. Full details can be had from the Director on requisition.

REGISTRAR

UNIVERSITY NEWS

VOL. XXIII APRIL 1
No. 13 1985
Price Re. 1.00

A Weekly Chronicle of Higher Education published by the Association of Indian Universities

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Editor :
M. S. RAMAMURTHY

First COVAP Conference at New Delhi

At the end of 3-day Conference held at New Delhi from 18th to 20th March, 1985, Vice-Chancellors of the Asian and the Pacific Region underlined the need for cooperation amongst higher education institutions in the region and also outlined some specific steps that could be taken to promote such cooperation.

The assembled Vice-Chancellors from the Region constituted themselves into three groups, one each for considering the following :

Group I : Academic standards, curricula, teaching methods, equivalence and recognition of degrees.
Group II : Management of Universities
Group III : Regional Cooperation

In the group which considered academic standards, etc. there was general recognition about and concern expressed at the fall in standards. While identifying a number of factors that contributed to this, the group felt that admission of students to colleges and universities should be through a test. They also felt that the number of students to be admitted in an undergraduate class should be restricted to 60 or 70. The teaching methods adopted in colleges and universities, the group felt, should be diversified by introducing seminars, preceptorials etc. in addition to lectures. Use of audio visual aids, to make teaching more interesting and creative, was also suggested. The group felt that there should be training programmes for teachers in universities and colleges which programme could be in two stages. One was a written test before a candidate is called for an interview for selection and the other a training programme of 4-6 months after appointment. At the same time emphasis had to be placed on teachers accountability, they felt.

The conference agreed to work on a proposal to have a common syllabus for certain "foundation courses."

The group further felt that courses of study should be modernised and flexibility should be introduced in the combination of subjects that a student could be permitted to take.

To promote student mobility within the region the Vice-Chancellors stressed the need for establishing equivalence of and according recognition to degrees and diplomas awarded by one institution in the region by another.

The group on Management of Universities suggested enactment of a law defining precisely the powers as well as resposibilities of the Vice-Chancellor so that the Vice-Chancellor could function effectively. The group also considered other aspects of university management like composition of the Syndicate, the Senate, etc.

On the question of autonomy the group observed : "The autonomous status of every university needs to be carefully guarded against pressures or interference. The authorities of the University will have to be accountable for every action. It is only true that the University is a sub-system in a social organisation and as such it cannot move away from its social commitment and act in an authoritarian manner. In this connection, the experience of countries like Philippines, Sri Lanka and the Republic of Korea would appear to be happy inasmuch as universities in these countries are free from interference by politicians. One of the suggestions offered in the context of universities set up in India is that the structure of the University without being complex should be reshaped that it would not get bogged down by too many statutes, rules, etc."

The group further felt that constant vigilance would need to be exercised on the campus situation in view of student unrest and discipline.

"Finally, it is suggested that all segments of higher education should be brought under one umbrella to promote inter-disciplinary approaches to studies and learning and to function as an instruganizations, provide them with workers, guns, money and if necessary, legal assistance. Their modus operandi is familiar : march to the office of the chief executive, present a charter of reasonable or unreasonable demands accompanied by a slogan raising crowd, issue posters and hold protest meetings, followed by a procession with an ultimatum for a strike. Their sense of timing is perfect. Certain demands are kept pending but are to be pressed only when the Administration is in a vulnerable position. It is for this reason, that whenever there is trouble in the streets, the students invariably join for a cobra dance on the roads. Instances are not wanting where the students went on strike in sympathy with the Railway workers or organizations and causes unconnected with education. This only shows the links that these students have with outside organizations.

Today, political parties make no secret of their interest in student politics or their stake in students union elections. Money spent on student elections, in some cases is not less than the amount spent for seats in the national assembly. The money spent is obviously not of the students. Those who have seen this drama for long, have reasonable grounds to believe, that foreign agencies, too, have started fishing in the troubled waters.

The fact that the press has frequently paid tributes to students, by projecting them as heroes and reformers, has made them conscious of their power. Ministers woo them and politicians court them. It has not been an infrequent scene, where student leaders were promptly invited into the rooms of the Ministers and politicians, while the teachers had to cool their heals outside for hours. Student leaders who feel that their support can possibly stabilize or destabilize Governments or who can walk into the presence of Ministers unannounced, or see and contact the high and the mighty in the land without appointment, cannot be disciplined by lesser mortals, like the teachers. Whatever the indiscipline, with the backing of political parties, and contacts with the top leaders of the Government, any one daring to touch student leaders or their partisans, would burn his fingers, if not lose his job. Few can risk a confrontation with them without having their offices ransacked or an agitation started for their removal. In such circumstances, the teachers abandon their role and take a back seat. Out of fear, some become aloof and retreat into their own shells. Some unscrupulous teachers, join the dominant student groups to gain some unfair advantages. Others join them for ideological reasons. Discipline disappears and institutions start disintegrating. Management of the institutions by teachers and administrators becomes impossible.

Another serious cause of indiscipline is the rising unemployment among the educated youth. It is a worry that haunts the subconscious of the average student throughout his stay in the university. Life, which has always been a rat race, has become a senseless one in the developing countries. Job opportunities for the educated are extremely limited. With the dawn of independence, a revolution in expectations and exploding population, has left a huge surplus of educated, but frustrated unemployed youth. The prospects of joining this crowd after getting a diploma from the University is an extremely daunting future that haunts the students. This nagging fear of bleak future is much greater in the case of an average boy who is likely to leave the University with a second or third class diploma in his hands, particularly in Social Sciences. This fear of hunger has a very devastating effect on his behaviour and sense of discipline. As I wrote in one of the reports on student problems "He does not agree with the chanting crowd, but he joins them merely to vent his frustration. He finds that the hopes and dreams with which he started from his home will be impossible to attain. He would like to set fire to a world in which he has no future".

I have briefly touched some of the major causes of indiscipline in our educational institutions, though a number of other factors, like, low standard of pre-university education, the change of medium of instructions and examination from regional languages to English, the mercenary attitude of the students towards studies, the overcrowded classes and ill-equipped laboratories, the lack of facilities for sports, the changing values of the society, the ever decreasing value of the degrees in the job market, etc. all contribute to create a climate not very conducive to the maintenance of high standard of discipline in educational institutions.

Attempts to deal with these problems on a serious scale were started in the Sixties. Student-teacher centres were set up in new campuses of the Universities and adequate staff under the leadership of senior professors was appointed to man the student welfare activities and for their guidance and counselling. Canteens, reading rooms, recreation rooms and guidance and counselling facilities were built at enormous costs. Even advisors were imported to help set up the new department. The student unions were given special funds for their activities and even a Station Wagon with a whole time driver and sufficient quantity of petrol was placed at their disposal, besides telephone facility for the union offices. Special emphasis was also placed on sports, both indoor and outdoor. It was theorised at that time that while the sports facilities would "sweat the devil" out of the more active students in the sports fields, the rest could be weened away from unhealthy activities by guidaance and counselling and by channelizing their energies into healthy extra-mural activities.

The results, however, were not anticipated. The provision of funds and facilities offered a bonanza to those who could capture the union. Certain political parties un-ashamedly jumped in. A new battle ground was laid out and the prizes for the winner both inside and outside the campus

(*Continued on page* 14)

The five Do's for Youth*

"Virtuous people are very scarce in the world. Pebbles are plenty, but diamond is rarely found. To criticise others is not a virtue;

The other one speaks of is not another person but God Himself".

The art of living is the most important thing in a man's life. Life and living are always one. To learn the right art of living is, therefore, man's foremost duty. Along with this art of living, there are a number of other fine arts, such as music, dance, painting etc. To study a book is also an art, and sports and games are a part of it. All these arts are, however, related to the external life, whereas the art of living concerns the soul of man; it is the Art of Delight (Ananda Kala). Just as a painter paints a beautiful picture by using a variety of colours, so also man can make his life beautiful by good thoughts, good words and good deeds.

In life, how long you have lived is not the major question; what is to be considered important is how you have lived your life. Time is invaluable. One cannot afford to waste even a minute. Whatever good work you want to do tomorrow, do it to-day itself. Do not put it off till tomorrow. But man does not put off a bad deed till tomorrow, he does it to-day. A pilgrimage he keeps on postponing till the next week or the next month or the next year. What is the reason for this? To perform a good deed, man thinks, he is going to live long; but to do an evil deed he hardly waits for a minute. If he wants to criticise someone or hurt someone, he does it immediately. This means man believes that life is short for bad deeds and long for good deeds'. This attitude proves that bad deeds make life short, while good and noble deeds are responsible for a longer and happier span of life. Therefore, if you want long, happy and healthy life, you are to devote your time to good thoughts, good words, and good deeds.

Most important for the art of living is to accept certain limits and regulations willingly. If a person follows these regulations right from his early age, he will have learnt this art of living properly when he grows up. The first discipline he must set for himself is that of *work*. Then come Word, Food, Sleep and Physical exercises. These five disciplines and like "five vital airs" (Panchaprana) for a man.

First is "Work". One must put five questions to oneself in relation to work. They are : why, where, when, how, and who. Before getting engaged in any work, you have to ask yourselves these questions about the work in hand and find a proper answer to them. You must have regularity in your work. You should not just do any work at any indefinite time. You must know what to do, at what time to do, and in what manner to do. Since you never care about these important questions, you never get any peace of mind.

The second discipline is "Word". The tongue occupies a very important place in this discipline, It tends to commit four sins, viz. (i) to tell lie; (ii) to talk about others' shortcomings; (iii) to complain about everything; and (iv) to talk too much. You must learn how to live without these four sins of the tongue. The tongue has got another evil nature of "making promises". If you make a promise, keep it at all cost. It has been aptly demonstrated by King Harischandra of the Puranas. This is truthful living. In order to keep the word given Harischandra gave away everything —his throne, his only son, his wife. To be false to one's given word or to barter away the everlasting truth for the sake of temporary gains and comforts, is worse than death. Even if you die for the sake of truth, your life will not be lost. This is true art of living.

The third one is "food". You must have your food at the right time, in keeping with your regular habits. Your food must be health-giving and in right quantity. If you eat indiscriminately, it is sure to affect your thoughts, words, and deeds, and make your whole life a mere waste. To eat too much, it is said, is to spoil one's health and to eat moderately is to preserve health. If you want to have a disease-free health, there can be nothing better than diet-control for you to have. Have fixed timings for your food, and don't change them from day to day. Regularity and control in food habits is the third lesson of the art of living.

The fourth discipline is "Sleep". You must go to bed punctually at fixed hours everyday. People between 18 and 30 years of age should sleep for 6 hours a day. Another 6 hours could be set apart for bath, food and such other daily necessities and duties. Devote 6 hours to social work. Teaching is also a social work. Delivering talks for the benefit of the public, keeping your house and surroundings in the neighbourhood neat and clean, and such other good works, also come under Social Work. The last 6 hours must be devoted to spiritual exercises like bhajans, japa, dhyana, reading good books etc. All your works should be done regularly. This time can also be given to the writing of poems and books, to painting, music and dance etc. Young people nowadays do not follow a regular routine in life, and as a result they cannot sleep well. Without food life may be possible, but without sleep it is difficult to live. Rest is essential.

The fifth one is "physical exercises". They give a healthy body. Life has no joy without good health. For all the Four Purusharthas (Dharma,

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An address by Bhagawan Sri Sathya Sai Boba.

Artha, Kama and Moksha), a healthy body is most essential. How to get this good health? It is the regularity in habits of food, sleep and work that gives you this precious thing. Gladstone was a man who led a very regular life. He followed these disciplines and had a long, healthy, and fruitful life. In India Dadabhai Naoroji, among thousands of others, also lived a very regular life. He never wasted a single moment. He was famous in the field of politics; he wrote some books as well.

In the field of Sports and Games, to win or to lose is immaterial. What is of utmost importance here is this discipline. On the playground, one must use words very sparingly. It is said, "Your word is your God". While playing games, you need not shout and get excited. When you cheer up the winning team, you only hurt the losing team. That is bad. That is cruelty, not human goodness. Your words must go with your heart, and heart with your words. Words and heart should not be divorced from each other. Success should not make you egoistic. To do one's duty is the "Dharma" of man; success or failure is in the hands of God. Be it success or failure, it should not go to one's head.

There have been instances where even very famous sportsmen fail very badly. Is it because of their lack of capability? No, the reason is their confusion and depression. The time and circumstances also play a role here. Some people feel nervous before the start of the same. Some show off, for example, while throwing a ball. This is their mental weakness. They do it in order to attract the attention of the onlookers. Our students should not learn such bad manners. Discipline is foremost, not success. Games should, therefore, be played strictly in accordance with the rules of discipline. Sports and games are meant for health; for joy; not for winning a victory. Since people won't be motivated to play games if you just say that they are good for health—you talk of success or failure.

In our Institute, games and sports are compulsory. But a few of you do not like to play at all. This is very bad. Of course, those of you who are interested in music, painting or any other form of fine arts may pursue them, but you must also play games; for, games bring balance to your mind. Without this balance of mind, the art of living cannot be learnt properly. Balance of mind attracts the Divinity itself. When you follow these five steps in right measure, you bring into your life a state of balance that attracts divinity. The divine within you shall attract the divine without you.

You know that on full-moon days there are high tidal waves on the sea. Why? It is because the sea contains the very same elements that are contained in the moon as well. Therefore, on full-moon days the attraction between the sea and the moon is higher than on any other day of the month. Similarly, mental patients are also found to be more insane (lunatic) on a full-moon day, because the mind and the moon are closely related to each other. This has been said in the *Purusha Sukta*. The human body has 60% of water, it has also Sodium and Calcium. The full-moon naturally attracts man too. Mind is the moon and Samsara is the ocean. There should be balance in man that gives rise to unity. No one now seems to think of the reason of the turmoil in the world. Scientists are more busy with their selfish gains rather than with the common goal of humanity. The welfare of mankind alone brings the welfare of the individual human being.

Youths, primarily, should control their tongue. They should do their work and have their food and sleep at regular intervals. Early rising is the royal road to sound health. There are a large number of students who fall asleep as soon as they sit down to read and get disturbed by various thoughts when they go to bed. So they miss both. You should study well, please your parents, and please Swami thereby. If you are not satisfied, your parents are not satisfied, nor is Swami, then what is the use of study? Discipline should be automatic like the shadow. Whether you are here at Prasanthinilayam or at home, you should always maintain discipline. Death is preferable to a life without discipline. Wherever you go, keep your heart clean and pure, and never give your precious lives to the momentary pleasures of the world. That is why Sankaracharya sang, "Neither youth nor wealth stays long", do not be carried away by them; devote yourselves to God".

I hope you will remember and practise the five disciplines I have given you and make your lives worthy and meaningful. □

UNIVERSITY NEWS

University News is published weekly by the Association of Indian Universities to promote awareness of contemporary thinking on higher education. Views expressed in the journal are those of the authors and do not reflect the policies of the Association.

Articles are invited by the Editor on matters relating to University education. Manuscripts (in duplicate) should be sent to Editor, University News, Association of Indian Universities, AIU House, 16 Kotla Marg, New Delhi-110002. They should be typed on one side of the paper, double spaced with wide margins. Each article should be accompanied by a summary/abstract of 100/150 words on a separate sheet.

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A Report

Annamalai University's Seminar On Three Vital Topics

Prof. S.V. Chittibabu, Vice-Chancellor, presided over a one-day seminar organized on 19.2.85 at the University level and attended by a large number of Professors, Readers and Lecturers from the Faculties of Arts, Science, Indian Languages, Education, Fine Arts, Engineering and Technology, Agriculture and Medicine. The topics discussed were (1) National Testing Service, (2) UGC Report on Central Universities; and (3) UGC's Policy and Programme for Improvement of Research in the Universities.

The three topics, of vital interest to the University community, received enthusiastic response from the members of the various faculties. The Vice-Chancellor assured the participants that he would project the views expressed in the seminar at the Annual Meeting of the Association of Indian Universities at Shillong at the end of February, 1985.

He welcomed views on the desirability of entrusting the NTS to a body constituted on the model of the GRE in the US and on the AIU taking on itself that responsibility. He welcomed views on the code of conduct for teachers, suggestions on the kind and type of machinery for remedying the grievances of the teachers, students, non-teaching staff and on student agitators who destroyed property on the campus. Admission to the Central Universities, he said, could be on a merit list prepared on the basis of scores obtained in a common entrance examination with reservation for communities that are socially and educationally backward.

National Testing Service

The Vice-Chancellor who spoke first stressed the importance of the subject under discussion from the point of view of improving the quality and maintaining uniform standards of higher education in our country. The proposed National Testing Service could not only assist the Universities and Colleges in respect of selection of students for the different courses but also play a useful role in test-development and analysis of the results. These would help the institutions of higher learning in getting the right-type of students as well as effecting necessary reforms in the present examination system.

Initiating discussions, Dr. T.C. Mohan, Dean, Faculty of Arts, said that the National Testing Service would go a long way to improve the standards of education in our Colleges and Universities. The proposal for the establishment of a National Testing Service was generally welcomed by a large number of teachers who participated in the discussion that followed; but they felt that the entrant's performance in the selection test conducted by the body should not be the sole criterion for admission to different courses.

One of the views expressed at the Seminar was that the National Testing Service should concentrate on defining and periodically evaluating and revising the standards of education prevailing in our colleges and universities. It was also said that admissions should best be left to the institutions concerned, with the National Testing Service paying attention to the development of improved selection procedures and giving advice to the different institutions on the availability of qualified applicants. Some members expressed their misgivings about the common entrance/selection test being favourable or prejudicial to students coming from urban and rural areas as well as those belonging to regions speaking different languages. It was suggested that the questions asked in the proposed selection tests should test not only the candidates' knowledge and understanding of the subject concerned but also their application skills. All the participants felt that the National Testing Service should be made a statutory body, free from the control of any outside authority.

It was also suggested that one of the purposes of this organization should be the identification of talented students for the award of national scholarships at the higher educational level. Summing up the discussion, the Vice-Chancellor expressed his happiness over the academic community of the university welcoming the proposal for the establishment of the National Testing Service and also the useful suggestions offered for its successful functioning.

UGC Report on Central Universities

While discussing the UGC's report on Central Universities the participants said that there was no need for restricting admissions, so long as the teacher-pupil ratio is maintained and facilities are made available.

Student indiscipline arose out of "manifest" and "latent" causes, it was felt. Uncertainty about their future is a cause of student unrest. A three-structure curriculum was suggested: (1) job-oriented courses (2) courses leading to self-employment; and (3) courses for researchers and educators. The cost of tuition, boarding and lodging also contributed to student unrest. Student power will contribute to student responsibility some felt and hence student representation on decision-making bodies would go a long way to eradicate student indiscipline. While welcoming student representation on university bodies it was felt that politicians must be kept out of them. One of the suggestions was that fines be collected from the parent(s) of agitating students who destroy university property. Revival of the internal assessment, it was felt, would not only bring the students closer to the teacher but will make students work regularly.

There should be a University Service Commission for recruiting teachers. A fair recruitment policy should be followed by the Central Universities as the UPSC had done. Some suggested student evaluation of teachers. Instead of insisting on a teacher staying in the department for so many hours, some practical and agreeable measure to evaluate his performance should be found. There should be a five year review plan to promote the deserving. Giving increments and incentives may be considered for teachers who cannot be promoted. Teachers may have freedom of expression subject to a self-imposed discipline. When University Acts are remodelled the remodelling, the participants insisted, should have relevance to academic interests.

They said that the Central Universities should set the tone for the universities in general and maintain their all-India character. There was a complaint that the pattern of admission of IIT's and the grants given to them were different but their end-products were compared with those of other universities! Grants to Engineering Colleges were ample but inadequate considering their requirements. No building grants were given for library or laboratory expansion, though grants were given for books and equipment!

Commenting on the charges levelled against the Central Universities the Vice-Chancellor said that they had been established to achieve a set of goals different from those of the State Universities that have a responsibility to the regions in which they are located. He indulged in some loud thinking on the subjects that affect teachers quite intimately: the upgrading of the pay scales of teachers and promotional opportunities to them. Grant of facilities and insistence on duty obligations form a package he said and therefore there could be no automatic promotion to the next higher cadre, after the passage of a certain number of years.

UGC's Policy and Programme for Improvement of Research in the Universities

The view expressed by the participants on the UGC's Policy and Programme for Improvement of Research in the Universities were in consonance with those of the panel of experts that advised the UGC on research in the Universities. They stressed the need for enforcing strict standards for admitting scholars to the research programmes. Indiscriminate admission would tell not only on "teacher morale" but very much on the excellence of teachers.

The participants spelt out the various ways in which the quality of education imparted at the post-graduate level could be improved. The seminar stressed that emphasis should be made on student participation in learning. It suggested steps to evolve a criterion or criteria for internal assessment that would be free from the charges of subjectivity. They favoured the formulation of a syllabus that would bring out the creative instincts of the scholars into play. They felt that the semester system would be more suited for initiating the reforms.

The participants were not happy over the content and pattern of the National Test for admission to research. One pleaded for a separate test for students from rural areas and the conduct of orientation courses for those selected through such a test. Some pleaded for the relaxation of the standard of the test for the JRF award. The aptitude test part of the NTS was found difficult by the competitors for the JRF. So there should be continuous evaluation of students at all stages and at regular intervals through the administration of aptitude tests.

They pleaded for the availability of enough volumes of books and journals for the use of researchers; the Library being supported by a contribution per research scholar per year as it is proposed in the case of the laboratories; increasing the proposed contribution of Rs. 3000 to Rs. 5000 in view of the escalating cost of books and materials; the payment of separate contingency grants to researchers specifically for the purchase of needed books; for a separate grants to meet the current subscription towards periodicals. There was also the welcome suggestion for the appointment of translators in the library to translate articles from Science and Technical journals in foreing languages (like German, French, Russian and Japanese).

There were suggestions that departmental committees scrutinise dissertations before submission; the proposal for joint supervision was welcomed and in that context the need for interdepartmental co-operation was stressed; the participants did not favour the idea of a subsidiary thesis; they suggested that alternatives to it be identified. The UGC, they felt, could liaise between Universities to avoid duplication of research. It could also provide a master-list of topics for research at different levels in all subjects. Before the participants could express confidence in the proposed system to review the summaries of theses and reports of examiners, they wanted to know more about the committees and their composition. One of the suggestions was that the UGC could arrange for the stay of teachers of one University in another University for short periods so that they could be exposed to fresh and new ideas and methods.

Winding up the discussions, the Vice-Chancellor expressed his pleasure over the keen interest the three themes evoked and said that he would place the views expressed in the seminar before the Annual Meeting of the AIU at Shillong at the end of February '85. He expressed satisfaction over the fact that out of the 146 Ph.D. degrees awarded by the University since 1981, forty four were awarded to the teachers of the University and commended warmly their application and dedication to research and excellence. □

Workshop on Scaling and Direct Grading at Dhanbad

At the Indian School of Mines, Dhanbad, certain problems faced in the matter of running the semester system, continuous internal evaluation, etc. came to be identified over a period of time. A few of them were :

(1) Over grading and undergrading in internal assessment marks in the case of a few departments;

(2) A variation in the standards of marking of papers for the admission test at which roughly 15,000 students compete for 300 seats;

(3) Inherent difficulty of overgrading in the matter of converting marks into grades with the help of normative tables of conversion using the past three years' marks and its distribution.

In order to look at these problems and to bring in knowledge and information regarding techniques and methods of solving these problems, a 3-day workshop was organised by the School, to expose the teachers in the departments to alternative methods and techniques of Scaling and Direct Grading. It should be reiterated that once the participants became aware and also acquired some basic skills of computation, they can be reasonably expected to implement them when such decisions to do so would be taken by appropriate academic decision making bodies.

The workshop was inaugurated by Prof. G.S. Marwaha, Director of the School, wherein he outlined in brief the problems faced. Prof. V. Natarajan, Project Director, Association of Indian Universities, in his keynote address, outlined the need for randomisation of answer scripts, scaling of marks of different examiners to take into account their individual variations in standards of marking, Scaling of Internal Assessment marks to the standard of the end-examination or vice-versa, scaling of marks obtained in the objective sections of the papers with those of others and finally, direct grading in place of conversion of marks into grades. Through an exercise in marking of a short answer essay, he demonstrated that the mark awarded to the answer of a student ranged from 5 out of 20 to 16 out of 20, the distribution being :

16 – 1
15— 1
14— 1
13— 1
12—24
11—15
10—24
9— 7
8— 7
7— 7
6— 3
5— 1

He also demonstrated that if the range namely 16 to 5 of 11 marks is distributed equally to 4 intervals for letter grades A, B, C, D and E then :

17 and above	A Grade	0
13 to 16	B Grade	5
9—12	C Grade	70
5— 8	D Grade	18
4	E	0

Even though equal mark interval classification for grades, tend to overgrade, the procedure is accepted to show that 70 out

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Prof. S.D. Gogoi takes over as President, AIU

Prof. S.D. Gogoi, BE, DIC, PhD, who has been Vice-Chancellor of the Dibrugarh University since March 1977, takes over as President of the Association of Indian Universities with effect from 1st April, 1985. Prof. Gogoi, who was born on 1st September, 1929, has had a distinguished academic career. He obtained his BE (Civil) from the Calcutta University in 1953. After a short stint at the Public Works Department of the Government of Assam he joined as Assistant Professor in Civil Engg. in the Assam Engineering College. In 1960 he obtained the D.I.C. from the Imperial College of Science & Technology, London and later the Ph.D. in Engineering from the same college. He became Professor in Civil Engineering in 1964 and Principal of the College in 1966 and became Director of Technical Education in the Assam Government in 1974. In March 1977 he became Vice-Chancellor of the Dibrugarh University.

Prof. S.D. Gogoi

Prof. Gogoi has been to a number of countries both for studies and on short visits. The countries include United Kingdom, France, Belgium, Switzerland, Holland, Austria, West Germany, Italy, Singapore, Hong Kong and Costa Rica.

Prof. Gogoi is a Fellow of the Institution of Engineers. He is also a member of the International Association of Hydraulic Research. He is a member of the Postgraduate Board of the All India Council for Technical Education. He is a member of the Planning Board for Hill Areas of Assam and a member of many academic and other bodies. He has also been a member of the Board of Governors of the IIT, Kharagpur. □

of 83 who graded agreed to award the grade of 'C'. It should be seen here that direct grading or marks converted to grades (Latter in this case) has brought in a considerable improvement in reliability or consistency of assessment.

The need for scaling was brought home to the participants in the workshop in situations :

(a) Where and when many examiners are involved in marking answer scripts. It was brought to the notice of the resource persons that this situation obtains only in the entrance test for the undergraduate programme and to a lesser degree, in the entrance test for post-graduate courses and not at all present in the subject-wise assessment in various departments. 25 examiners are involved in marking nearly 15000 scripts and since randomisation has not been resorted to, each examiner not only brings in his own variation in the standard of marking but also that which would be caused by the quality of scripts marked by every examiner being not uniform.

A method of scaling is suggested to take care of the variation in the standard of marking. This presupposes that randomisation of answer scripts through the use of random numbers generated manually or by a computer must be made use of. Scaling then takes care of individual variation of examiners in standards of marking. Every examiner's standard of marking is characterised by the Mean and Standard Deviation of the marks awarded by him. It is then possible for us to work a pooled Mean (Average of all means of examiners) and an average of Standard Deviations. This then becomes the standard to which all other examiners' marks ought to be scaled. Every participant was allowed to develop this skill of computation involving the scaling procedures.

Two other situations where the Scaling is needed, were also brought home to the participants. These are :

(1) Internal marks awarded by teachers can be scaled accepting the end of term examination marks as standards. Wherever it is possible to ascertain and accept the internal marks as standards, end of term marks can be scaled to it. However, the decision to choose a standard will be left to the department.

(2) Where the question paper consists of a combination of objective, as well as short, long answer essays, the marks obtained in the objective section can be scaled to those on the other sections. The procedures or the technique of doing is the same as indicated for scaling different examiners marks to a common standard.

An alternative technique called Rank Order Method of Scaling was also presented. This involves ranking students in Internal Assessment and replacing the ranks by the end of term examination so that both of them will be on the same scale. This method applies equally to marking as well as grading system.

On the last day, basic concepts of direct grading were given to the participants and the necessity of building up either a paradigm of criterion of grading or actual graded answer to be prepared was insisted upon. It was shown to them that direct grading is one of the possible ways of solving their problems of over/undergrading.

During the open session, several issues were raised by the participants which were answered by the panel consisting of Dr. Marwah, Prof. Natarajan and Prof. T.C. Rao. The following plan of action is suggested:

(1) A workshop to train teachers in direct grading in different subjects can be organised for a period of 2 days :

(2) A workshop exclusively to train teachers to prepare a variety of question types namely MC, SA, LA, problem solving etc. in different subjects can be organised to finally constitute a system of question banking.

(3) The question paper in each subject can be restructured to include objective type part. Care must be both taken in the preparation of discriminating items as also in the conduct of that section namely, the question book as well as response sheet must be collected back after using that section and before administering the other sections of the paper.

Training in instructional technology workshop at KKV

"Education is a dynamic process and hence training to the teachers in instructional technology is a must for effective teaching." said Dr. Prataprao Salvi, Vice-Chancellor of the Konkan Krishi Vidyapeeth. He was speaking at the inaugural function of the workshop on Training in Instructional Technology organised at the Konkan Krishi Vidyapeeth, Dapoli. He further said, "after the independence due weightage was given in five year plans for the rapid spread of education. However, while achieving this not much emphasis was laid on the quality of education. It is felt now very essential to give more emphasis on qualitative and relevant education."

He further added that the students and the teachers are the main components of the educational system and it would be the prime function of the teachers to make their teaching meaningful and effective. This demands for more use of educational aids, especially audio-visual aids. For this, teachers should receive training regarding effective use of appropriate aids.

Pointing towards the heavily criticised bookish education, he said, "The principle of 'learning by doing and seeing is believing' has more significance and hence emphasis should be laid in organising work experience exercises and demonstrations. The teachers should plan their lessons well in advance. He further expressed that the workshop would meet the expectations of both, the organisers and the teachers.

Experts from the State Institute of Education, Pune were specially invited for imparting training to the university teachers.

Computer centre in the offing at Allahabad Varsity

The University has already made a headway for a Computer Centre by having mainframe computer system for a Central Computer facility. The Department of Electronics, Government of India has permitted the University, the import of a Russian Computer EC 1045. It is a fourth generation universal integrated system fully compatible with IBM 370 having provisions of Virtual Memory. The system would have 2 MB Memory, twelve terminals including two with hard copy facilities, three removeable disc system of 100 MB each, three tape drives for 2400 ft length spool, two line printers of 900 lpm, a graphic terminal and other related hardware. The system is especially suited for advance scientific research as the terminals can be made available at a distance of 1 Km from the Central Computer without any additional hardware. By using telecom control unit and modems, long distance computer facility can also be organized. The system would be suitable for batch processing, time sharing mode, interactive mode and also for real-time applications. It would support six programming languages and a few standard packages for scientific and statistical applications. It would be very useful for large data handling like that of a Science Congress.

In order to inculcate computer culture in the University, it is being proposed to organize a few computer awareness programmes for teachers, officers, and research scholars of the University. Such programmes would shortly be arranged. Training facilities, for actual users from different disciplines, may also be arranged on the installation of computer system in the campus.

It is expected that the University would soon start master degree course in computer science. The matter is already under active consideration of the various academic bodies of the University.

Already the University has a Micro Computer Application Laboratory at the J.K. Institute of Applied Physics besides a number of micro-Computer systems in some laboratories of the University. Also Computer Science as an optional subject is available for students studying in BSc.

ISM establishes a rockburst research observatory at Chinakuri colliery

The Department of Mining Engineering at Indian School of Mines in collaboration with the Department of Applied Geophysics has established a fully-operational seismometer network as a part of a research project for studies on rockburst and induced seismicity in and around Chinakuri 1 & 2 pit colliery in Ranigunj Coalfield.

The Project received support to the tune of Rs. 15.7 lakhs from the Department of Coal, Govt of India and a tripartite network with Willmore seismometers is in use telemetering the seismic data to a central observatory with a Recal 14-channel Geostore Recording Unit. The observatory also includes other associated equipment for this seismic network including Mingogragh, field test box, linear recorder etc. besides a Sprengnether micro-earthquake recorder. During 1983-84, 3 major bumps and several earthquakes were recorded by the seismometer network. The project will provide essential planning and control inputs for the extraction of bump-prone Dishergarh seam at depths exceeding 700 metres and should contribute to the safety to the operations.

Specialist course on design of blasting system at ISM

A three-day programme on "Design of Blasting Systems—Some Special Problems" was organised at the Indian School of Mines, Dhanbad by the Department of Mining Engineering.

Senior representatives from the explosives industry, officers from the Directorate-General of Mines Safety, Central Mining Research Station and Eastern Coalfields Ltd. participated in the programme. The course covered a wide range of prolems relating to the design of surface mine blasting including environmental problmes.

Defence Research & Development Organisation
Invites Applications for Appointment for Fellows

To commemorate its Silver Jubilee, DRDO has established two Senior Fellowships for Senior Scientists/Professors working in research laboratories/educational institutions in the country and abroad. These fellowships are tenable at Institute of Armament Technology, Pune and are for a period of two years. The choice would be for fellows working in Optoelectronics, Lasors, Millimeteric Wave Technology and Computer Aided Design with emphasis on software development.

The Fellows will be expected to deliver few lectures and free to write monographs and pursue research in their areas of specialisation. They may, if they wish, also participate in some of the Research and Development programmes at any one of DRDO laboratories located at Pune or other places in the country.

The Fellows are expected to be about 45 years of age and should have atleast 12 years research/teaching experience. The fellowship amount will be approximately Rs. 55,000 per annum plus house rent allowance or residential accommodation with rent chargeable at Government fixed rates in addition to usual fringe benefits.

Candidates with proven track record are invited to apply within one month enclosing their detailed curriculum vitae along with two names of referees, to Dr. I.D. GABA, Directorate of Personnel, Room No. 225 'B' Wing, Sena Bhavan, New Delhi-110011.

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New girls hostel at MDU

Dr. (Mrs) Madhuri Shah, Chairman, University Grants Commission laid the Foundation Stone of the Girls Hostel in the premises of Maharshi Dayanand University, Rohtak on 2nd March, 1985.

Dr. Hardwari Lal, Vice-Chancellor, in his welcome speech, expressed happiness on the 2nd visit of Dr. Madhuri Shah to this University. He spoke of his contacts with the Commission for the last 30 years in various capacities i.e. as Minister of Education, Haryana and Vice-Chancellor of this University since Oct., 1977.

The University which was established in 1976 by the State Govt., languished for 5 years for the want of the UGC's financial support but ultimately Dr. (Mrs) Shah enabled us to develop the physical base of the University rapidly by releasing the required grants.

The Vice-Chancellor also talked about the girls hostel and library buildings which immediately needed funds for their construction. He also appreciated the State Govt's positive and generous attitude towards building up of the University.

On this occasion Dr. (Mrs.) Madhuri Shah mentioned that U.G.C. had given near about 2 crores of Rupees for the development of the university. She also talked about the changes in higher education and preferred that these changes be brought out only after stormy discussion in the universities in which common people should also participate. According to Dr. Shah, the aim of education should be the overall development of personality of students in the fields of sports, art & Culture etc. Education is the development of human resources, so basic changes are needed in education i.e. re-orientation of teaching faculties, changing of the courses etc.

While explaining the new policies of the University Grants Commission, she felt the need for setting up institutions for research scholars in remote areas, nuclear science centre, mass communication media centre etc. Regarding the vocationalization of education, she suggested starting vocation courses in already existing institutions.

DST grant to Poona Varsity

The Department of Science and Technology, New Delhi has awarded a grant of Rs. 20 lakhs to Dr. Sohan Modak, Head Department of Zoology, University of Poona.

The grant will be utilised to carry on a research project, the purpose of which, is to isolate and produce in large quantities genes from the mosquito Anophelis using genetic engineering techniques. It is proposed to identify and recognise the manner in which pesticides attack the pest at level of chromosomes, along with production of gene libraries and D.N.A. clones; genomic control of development and differentiation and organisation and regulation of drug responding loci in mosquito.

IVth International Meeting of University Administrators

The Conference of Registrars and Secretaries and the Conference of University Administrators of UK in collaboration with the Association of Indian Universities will be holding the IV International Meeting in New Delhi from 30th December, 1985 to 4th January, 1986.

The Series of International Meetings opened in the University of Bath, UK in 1981 and was followed by the second in Honk Kong in September, 1982 and the third at the University of Waterloo in Canada in July 1984. The fifth in the series will be held in Australia to be followed by a meeting in USA.

The Delhi meeting will include keynote speakers, plenary sessions and discussion groups. The discussions will be focussed on the following themes:

(i) Overseas students — both general strategies & student advising
(ii) Professional training of university administrators.
(iii) Continuing/Distance Education

Though the Conference sessions will be held in the Taj Palace Hotel, half-day visits will also be made to Delhi based Universities and Institutes. Cultural and Social entertainments will also be organised in the evenings.

The Indian participants, making their own arrangements in Delhi, shall pay a registration fee to cover the actual costs and administration costs amounting to £50.

Shri Anjni Kumar, Joint Secretary, Association of Indian Universities will be the local Organising Secretary of this Conference. Study visits to various universities will be organised as a Posh Conference Activity. The cities proposed be visited are :

North Zone
Agra, Jaipur, Aligarh & Simla

Western Zone
Udaipur, Ahmedabad, Bombay & Pune

Southern Zone
Hyderabad, Banaras & Madras.

Eastern Zone
Lucknow, Banaras, Calcutta, Shantiniketan. □

Bio-technology course at Poona Varsity

The University Grants Commission and the National bio-technology Board have jointly awarded a grant of Rs. 1.4 crores to the Poona University. With this aid an inter-disciplinary teaching programme of bio-technology and advance training course will be organised.

Part of the grant will be utilised under following heads: Building construction Rs. 10 lakhs; purchase of equipments Rs. 50 lakhs; Library Rs. 7 lakhs and Recurring expenses Rs. 54 lakhs.

An entrance examination on All India basis will be held jointly by the University Grants Commission and the Poona University for the students who have passed B.Sc. Out of the successful candidates, only 20 students will be admitted for the bio-technology teaching programme and the training course. Each admitted student will be paid a stipend of Rs. 400/- per month.

A number of persons (6 Professors, 4 Readers, 6 Research Associates and 8 official staff) will be selected and appointed to conduct the course.

The programme will be implemented jointed by the National Chemical Laboratory, the National Institute of Virology and the Department of Zoology, University of Poona under the leadership of Dr. Sohan Modak, Head, Department of Zoology, University of Poona, Pune.

1986 ACU conference of executive heads of Commonwealth Universities

The Association of Commonwealth Universities advices that arrangements have been agreed to hold the 1986 ACU Conference of Executive Heads of Commonwealth Universities at the Universiti Sains Malaysia, Penang from 18 to 24 August 1986 by kind invitation of the Vice-Chancellor and the University authorities.

News from Agril. Varsities

HAU Kisan Mela

The two-day Annual Kisan Mela of Haryana Agricultural University (HAU) concluded on March 15, 1985. More than 6000 farmers from Haryana and its adjoining states visited this mela.

The farmers were taken on guided tours to different stalls by scientists where they showed much interest in raya RH-30 variety of mustard. The farmers were shown the various bumper crops like wheat, gram, sugarcane and were told about the techniques that have been used in their cultivation. The farmers took interest in Gaurav variety of gram, H-75-35 which is blight tolerant and has a 20 per cent higher yield potential than the other existing varieties of gram. At this stop, gram specialists told the farmers in detail about the performance of this variety. Farmers purchased the seeds of various crops in a large quantity.

At the wheat demonstration plot the crop grown with the wheat WH-283 and WH-291 was also a great attraction for farmers this year as these varieties have been found very promising under timely sown conditions. Both these varieties have an attractive grain having a good chapati quality and are highly resistant to the disease. This year apart from farmers, rural as well as urban ladies also came to see this mela. More than 100 stalls were put up at the agro-exhibition where agricultural literature, farm implements, and things of domestic use were displayed in attractive ways. More than 300 farmers got samples of their field soil and water tested. Agricultural literature worth more than Rs 4000 was also sold on this occasion. At the crop competition many farmers displayed the samples of their crops and more than 40 farmers were given prizes by the Vice-Chancellor of the University Shri L.D. Kataria. On both days a questions and answers session was held where farmers asked for the solution of their field problems from scientists.

Mr. B.D. Goyal and Mrs. Indra Bishnoi, members of Board of Management of University also visited this mela. Earlier the mela was inaugurated by Shri. L.D. Kataria, Vice-Chancellor, HAU. On this occasion a cultural programme was staged by the artists of AIR, Rohtak.

Bihar agricultural administrators at PAU

Dr. J.C. Bakhshi, Vice-Chancellor, Rajindra Agricultural University, Bihar and Sh. S.K. Srivastva, Agricultural Production Commissioner, Bihar were at the Punjab Agricultural University, Ludhiana on a 3-day visit to have an indepth study in order to streamline the functioning of the Rajindra Agricultural University, Pusa which was established in 1971. It was at Pusa (Bihar) that in 1905 the first central agricultural research institute known as Imperial Agricultural Research Institute was established with the help of a generous donation of 30 thousand pounds at that time by an American Philanthropist, Mr. Henry Phillips. Later on the Institute was shifted to Delhi and is now known as the Indian Agricultural Research Institute, New Delhi.

The visitors had a meeting with the Vice-Chancellor of PAU, Dr. Sukhdev Singh and Deans and Directors which was followed with visits to the departments of Plant Breeding, Soils, Food Science & Technology and Animal Science. Dr. K.S. Gill, Director of Research showed them the various field demonstrations on crops, soils, mushroom, poultry, dairy and honey bees. They also visited the College of Agricultural Engineering, Veterinary Science and Communication Centre.

HAU workshop on appropriate technology for NW rural households

The Department of Family Resource Management of College of Home Science, Haryana Agricultural University, (HAU) Hissar organised recently a two-day workshop on 'Appropriate Technology for North-Western Rural Households'. Dr. R.P.S. Tyagi, Director of Research of University inaugurated the workshop.

Speaking on this occasion Dr. Tyagi said that though Haryana has achieved commendable progress in various fields, especially agriculture, still it had lagged behind in household front. Elaborating on the role of new technology in mitigating the hardships faced by rural women, Dr. Tyagi said that concerted efforts should be made for evolving the new technology, as with the help of improved technology poor women would also be able to change their way of life. Dr. Tyagi further emphasised the simplification of present technology and urged the delegates to disseminate it to rural women in easy and simple language so that they can be further inspired and encouraged to adopt the new technology.

Dr. K. Pradhan, Dean, Post-graduate Studies presided over the workshop.

Apart from scientists, more than 25 delegates from various states took part in this workshop. During the two days the delegates deliberated and finalises improved technology for household use.

More women's participation in farming urged

Dr. Sukhdev Singh, Vice-Chancellor of the Punjab Agricultural University said that farmers should actively associate their women folk in their agricultural operations like selecting of seeds, management of milch animals and scientific storage of foodgrains.

The Vice-Chancellor was addressing a large gathering of farmers on the concluding function of the Kisan Mela held recently at Ludhiana. The function was arranged to give away prizes to the winners of the Farm Produce Competitions. He said that despite troubled situation in Punjab, more than 25,000 farmers had attended the Kisad Mela and learnt new farm technology regarding the kharif crops and farm equipments. He further said that the scramble of farmers for having the seeds of new varieties and purchase of farm literature in huge quantity bore the testimony that the hard-working farmers of this State considered PAU as a temple of farm learning.

Dr. Sukhdev Singh advised the farmers to adopt new skills like bee-keeping, mushroom growing, cultivation of fruits and vegetables and tree plantation.

Mr. S.S. Dhanoa, Chief Secretary to Government, Punjab also visited some of the stalls put-up by various departments and research area of the PAU.

The Vice-Chancellor also released the first copy of 'Mehak Punjab Di' an anthology of Punjabi poems written by a farmer poet-Kartar Singh Kavi.

Problems of Students Discipline

(*Continued from page* 4)

were valuable and visible. Not only were the efforts of the student affairs department towards healthy activities completely ignored, rather the staff was looked upon as spies of the university and the government, meant to monitor and control their activities. This wide spread misconception among the students virtually destroyed the usefulness of the department and reduced the employees to errand boys meant to arrange the chairs and tables at the students union functions.

In the seventies, when a new political party which had extensively used the students in their election campaign came into power, they tried another method to contain the student problem. Borrowing the idea from some of the Latin American Universities, they amended the University Acts to put the students in the decision-making bodies like the Syndicate and the Senate. This raised the stakes of union elections still higher. The hope that by participation of students in the decision making the unions would cooperate with the Administration turned out to be an illusion. While the President of the Students Union would press his view inside the Syndicate Room, his supporters would be chanting slogans outside for acceptance of their demands. Student groups out of power felt that they would not get justice from the bodies in which their opponents were sitting without showing their strength on the campus battle fields. This intimidation inside and outside further affected the discipline.

The political violence among the students groups started seriously affecting the academic life of the educational institutions. It increased both in intensity and frequency till the Government banned the unions and replaced them with a new system of Student Councils. This had a very salutary affect on the working of the educational institutions where every thing has become almost normal. Sports activities continue undisturbed and for extra-mural activities emphasis has been placed on delegating all functions to the departmental societies. The Central Council of University students is elected by and from among the office bearers of the departmental societies. It is hoped that this decentralisation of student activities would make things more manageable and prevent the creation of Frankensteins.

INDIAN STATISTICAL INSTITUTE

Applications are invited for the award of Junior Research Fellowships of Rs. 800/- per month for research work in the areas specified below. The award will be based on academic record, written tests and an interview. Besides fellowship there is an annual book allowance of Rs. 750/-. Hostel facilities are also available.

Research Areas and Eligibility Conditions

Group A : Fault Tolerance, Testable Design, Parallel Algorithms, Computer Communication Network, Analysis of Algorithms, VLSI Architecture, Pattern Recognition, Artificial Intelligence, Image Analysis, Digital Communication and areas related to these. **Eligibility :** (i) M.Sc. or equivalent degree in Physics/Mathematics/Statistics or (ii) B.E. or equivalent degree or M.E. or equivalent degree in Electronics/Computer Science/Electrical Engineering.

Group B : Viscous Flow, Hydrodynamic Stability, Statistical Theory of Turbulence, Dynamical Meteorology. **Eligibility :** (i) M.Sc. or equivalent degree in Physics/Mathematics/Statistics or (ii) B.E. or equivalent degree in Mechanical Engineering.

Group C : Foundation of Quantum Mechanics, Nuclear and Particle Physics Supersymmetry, Cosmic Ray Physics and Astrophysical Plasma. **Eligibility :** (i) M.Sc. or equivalent degree in Physics/Mathematics/Statistics preferably with Physics or Mathematics at the graduate level.

Group D : (i) Proterozoic Geology (ii) Quantitative Geology and (iii) Vertebrate Palaeontology. **Eligibility :** (a) for (i) M.Sc. or equivalent degree in Geology with knowledge of Mathematics up to graduate level, (b) for (ii) M.Sc. or equivalent degree in Statistics/Mathematics with interest in Geology and (c) for (iii) M.Sc. or equivalent degree in Geology with interest in Zoology.

Group E : Bio-Engineering and the skin. **Eligibility :** M.Sc. or equivalent degree in Physics with specialization in Bio-Physics or Medical Physics or any allied specialization.

The written tests may be held at Bangalore, Baroda, Bhubaneswar, Bombay, Calcutta, Delhi, Gauhati, Hyderabad, Madras, Nagpur, Patna, Trivandrum, Varanasi and Waltair. However, if a sufficient number of candidates do not opt for a centre, the tests may not be held at that centre.

Applications on plain paper in the following proforma should reach the DEAN OF STUDIES, INDIAN STATISTICAL INSTITUTE, 203 BARRACKPORE TRUNK ROAD, CALCUTTA-700035 **by 15 April 1985 :** (1) Name and Address for correspondence (in block letters), (2) Date of birth & sex, (3) Academic qualifications (starting from Higher Secondary or equivalent), (4) Research interests (specify the group (only one) and the research area(s) in order of preference), (5) Centres preferred for written tests (name three centres in order of preference), and (6) Signature with date. Applicants must send the following with their applications: (i) attested copies of certificates and mark sheets, (ii) two attested passport size photographs, (iii) one self-addressed envelope size 25 x 10 cms, and (iv) other documents in support of the application.

The tentative date for the written tests is **Sunday, 19 May 1985.**

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AIU Library & Documentation Services

One of the important functions of the Association of Indian Universities is to act as a clearing house of information on higher education in the country. Towards this end the AIU Library is engaged in collection building and developing instruments for the dissemination of research information. Over the years a valuable collection of books and documents on different aspects of higher education has been acquired.

The Library has also developed Bibliography of Doctoral Dissertations as an effective tool in the dissemination of research information. Retrospective bibliographies covering the period 1857-1970 and 1970-75 were the first to appear. Effective 1975, however, the bibliography is issued annually in two volumes. One volume deals with Natural and Applied Sciences while the other records doctoral degrees awarded in Social Sciences and the Humanities. In addition to the normal bibliographical details like the name of the Research Scholar, the title of the thesis, years of registration for and award of the degree, and the name of the University accepting the thesis for award of a doctoral degree, the bibliography also gives name and complete address of the supervising teacher and an availability note that seeks to inform whether a copy of the dissertation is available for consultation and use in the University Library/Department or Registrar's Office.

The columns 'Theses of the Month' and 'Research in Progress' are intended to cut out the time lag between the receipt of information and its inclusion in bibliography. Such Universities as are not sending us regular information in respect of Doctoral Theses accepted and research scholars enrolled are welcome to make use of these columns.

The Library is situated at 17-B, Indraprastha Marg, New Delhi-110002. It is open from 10 a.m. to 5 p.m. Monday through Saturday except Second Saturday.

RESEARCH IN PROGRESS

A list of Research Scholars Registered for Doctoral Degrees of Indian Universities

SOCIAL SCIENCES

Sociology

1. Patil, Laxmikant M. *A sociological study of female employees in tobacco processing industry at Nipani*. Shivaji U, Kolhapur. Dr. R.B. Patil.

Commerce

1. Gupta, Khem Chandra. *Organizational and management effectiveness in industrial enterprises of India: A comparative study of their different segments*. MDU, Rohtak, Dr. O.P. Goyal.

Home Science

1. Bagai, Rita. *Adult infant interaction implications for development*. U Delhi. (Dr. S. Anandalkshmy.

2. Raina, Usha. *Blood pressure distributions in adolescent children*, 13-15 *years and its relationship to nutrition status*. U Delhi. Dr. (Mrs.) S. Malhan.

HUMANITIES

Language & Literature

English

1. Iyengar, Laxmi Gopal. *Values and technique in the fiction of J.D. Salinger*. Devi Ahilya, Indore. Dr. R.K. Sharma.

Sanskrit

1. Krishna. *A critical study of the roots having the meaning 'to kill' as used in the vedic literature*. MDU, Rohtak. Dr. J.D. Vidyalankar.

2. Lalithakumary, C. *Laghudhermprakasika : A study*. U Ker, Trivandrum. Dr. N. Parameswaran Unni.

3. Muraleedharan Nair, M. *Yamakakavyas in sanskrit*. U Ker, Trivandrum. Dr. N. Parameswaran Unni.

4. Sampariya, Ram Kumar. *Unnisvin beesvin shatabdi mein rachit kavya shastriya granthon ka sameekshatmak adhya yan*. HS Gour, Sagar. Dr. G.L. Suthar.

5. Sharma, Gopal Krishna. *Vatsraj kee sangyanatmak bhasha ka samajik adhyayan*. Devi Ahilya, Indore. Dr. H.R. Dholkia.

6. Sharma, Ramesh Chandra. *Acharya Rudart aur Mammat: Tulnatmak Adhyayan*. Devi Ahilya, Indore. Dr. K.N. Joshi.

7. Sobhana, S. *Advaita of Sri Sankara with special reference to Mandukya karika*. U Ker, Trivandrum. Dr. R. Kerunakaran.

Hindi

1. Bachhotiya, Kala. *Bharat ke pramukh bankon mein vyavsayik hindi ka prayog: Ek servekshan*. Devi Ahilya, Indore. Dr. G.D. Tripathi.

2. Chauhan, Paras Ram. *Sathottary hindi natkon mein vidroh ke vibhinn swar*. HPU, Shimla. Sr. Lallan Rai.

3. Dolna, Pempa. *Nai kavita ke samajik sandarbh*. HPU, Shimla. Dr. (Mrs.) Krishna Raina.

4. Krishan Kumar. *Sathottary hindi kavita aur Dhumil ka kavya*. HPU, Shimla. Dr. (Mrs.) Krishna Raina.

5. Mohana, F.R. *Main trends of literary criticism in hindi, post independence period*. U Ker, Trivandrum. Dr. V.P. Mohammad Kunju Metharu.

6. Sehrawat, Jagir Singh. *Haryanvi lokoktiyon ka vishleshnatmak adhyayan*. HPU, Shimla. Dr. Rajdeo Singh.

7. Sharma, Bhupindra. *Sathottary hindi kahani mein manviya sambandhon kee avdharna*. HPU, Shimla. Dr. (Mrs.) Krishna Raina.

8. Shukul, Rashmi. *Hindi kee chhayavadi kavita mein vednatattva*. Devi Ahilya, Indore. Ku. C.K. Mishra.

9. Vinayachandran, M.S. *Contemporary problems depicted in the novels of Ajneya.* U Ker, Trivandrum. Dr. N.E. Viswanatha Iyer.

Geography

1. Devaliya, Rajendra Kumar. *Ecology and spatial distribution of medicinal plants in the Upper Karmada Basin.* HS Gour, Sagar. Prof. V.C. Mishra.

2. Rai, Hargovind. *Urban growth trends and patterns of urban development in Madhya Pradesh.* HS Gour, Sagar. Dr. D.S. Shrivastava.

3. Rajput, Prabhu Dayal. *Industrialization and population change in the Western Malwa Plateau.* HS Gour, Sagar. Dr. S.K. Shukla.

4. Shukla, Abha. *Demographic structure of Gwalior City surrounding areas.* HS Gour, Sagar. Dr. R.S. Dube.

5. Singh, Radhe Shyam. *The ecology of diseases and health care system in Betul-Chhindwara Plateau,* HS Gour, Sagar. Dr. Kailash Chaube.

History

1. Desai, A.S. *Ancient Kolhapur: From prehistoric to Yadav period.* Shivaji U, Kolhapur. Dr. B.D. Khane.

THESES OF THE MONTH

A list of Doctoral Theses Accepted by Indian Universities

SOCIAL SCIENCES

Psychology

1. Garg, Sunita. *Decision making in children: An experimental investigation.* U Delhi.

Sociology

1. Amsa, P. *Work role commitment of industrial employees: A process model.* IIT, Bombay.

2. Devasia, V.V. *Socio cultural background on homicide and prison life: A study of life term prisoners.* Nagpur U.

3. Gopala Chary, T.V. *Political socialization among the tribal leaders: A study of surpanches of Khammam District.* OU, Hyderabad.

4. Jain, Prem Lata. *Shri Anandghan ka rahsyavadi darshan.* APSU, Rewa.

5. Jain, Pushpa. *Acharanga sutra ka niti shastriya adhyayan.* APSU, Rewa.

6. Jhaveri, P.B. *The problems of social and occupational adjustment of working women, with reference to Rajkot City.* Saur U, Rajkot.

Social Anthropology

1. Parasher, Asha. *Yaigyavalvya Smriti : Ek samajshashtriya adhyayan.* HS Gour, Sagar.

Political Science

1. Agnihotri, Snehlata. *Evolution of municipal administration in Murwara Katni.* RDV, Jabalpur.

2. Barman, D.C. *Emerging leadership pattern in rural Bangladesh.* U Raj, Jaipur.

3. Kameshwar Prasad. *The training system for the officers of the Bihar Police Service.* Mag U, Bodh Gaya.

4. Mukhopadhyay, Debiprasad. *Problems in hierarchy: A case study of West Bengal administration.* U Calcutta.

5. Nigjeh, Said Mirzai. *India as a regional power of 1970s: Dimension and direction of the role.* OU, Hyderabad.

6. Pandya, Jayantkumar Nanubhai. *Leadership and development in panchayati raj: A case study of Kheda District in Gujarat.* SPU, Vallabh Vidyanagar.

7. Sisodia, S.S. *India's foreign policy during Smt. Indira Gandhi.* Vikram U, Ujjain

Economics

1. Aggarwal, Ram Niwas. *Profits, investment and financing behaviour in the automobile manufacturing industry in India.* U Delhi.

2. Atikuddin Ahmed. *The anatomy of rural poverty in Assam: A case study of Dibrugarh Sub-division.* Dibrugarh U.

3. Chakraborty, Sumita. *Sales taxation in Assam: An analytical study.* Dibrugarh U.

4. Gulati, Ashok. *Some aspects of agricultural price policy: A case study of wheat in India.* U Delhi.

5. Iyengar, Sudarshan Narasimha. *Economics of minor irrigation in Panchmahals.* MSU, Baroda.

6. Kamaiah, Bandi. *An econometric study of macro money demand function in India.* IIT, Bombay.

7. Kamar Ijhar. *Economics of irrigation with special reference to completed medium irrigation scheme in Baghelkhand Region.* APSU, Rewa.

8. Krishna Veni, Lankapotu. *Export pattern of India's tea,* 1950-1951 *to* 1979-1980. Andhra U, Waltair.

9. Mishra, Kaushal Prasad. *Satna Jile mein krishi jansankhya atirake evam arthik vikas.* APSU, Rewa.

10. Pathak, Pushpa. *Industrial linkages and regional development: A case study of a small town, Dhampur: U.P., India.* JNU, Delhi.

11. Patwardhan, Jayshree Ashok. *Small medium and large paddy cultivators within the Itiadoh Command Area : A socio economic study.* Nagpur U.

12. Raghavan, M. *Movement of administered agricultural prices in India since the mid 60s: A study of government's policy on price fixation in relation to cost of production with special reference to major foodgrains.* JNU, Delhi.

13. Sambasiva Rao, Boppudi. *An economic analysis of dairy farming: A study in the command area of Nagar junasagar Project.* Andhra U, Waltair.

14. Shukla, Shrikrishna Prasad. *Wages and productivity: Cause and effect analysis, with special reference to cotton textile industry in India since Third Five Year Plan.* HS Gour, Sagar.

15. Tewari, Mohal Lal. *Poorva Rewa Rajya kee arthniti evam prabandh,* 1880 *se* 1947. APSU, Rewa.

16. Varma, Hari Om. *A study of cost function of Indian Railways.* U Delhi.

Public Administration

1. Suryakaladhar, M. *Performance appraisal: A comparative perspective of selected public and private sector undertakings.* OU, Hyderabad.

Education

1. Banerji, Meera. *An approach to syllabus design for english language teaching at the undergraduate level in India.* BITS, Pilani.

2. Chinnappa, K.B. *An analytical study of field hockey in India.* Bangalore U.

3. Joshi, H.O. *A study of the working of tuition classes and their social utility.* Saur U, Rajkot.

4. Joshi, N.D. *Socio-cultural and educational conditions of adivasis in Kerala.* U Ker, Trivandrum.

5. Madhava Kurup, V. *A lexical morphemic and content analysis of Malayalam readers for standards I-IV in Kerala.* U Ker, Trivandrum.

6. Malik, Suman. *Personality differential of adolescent girls across sociometric status.* Pb U, Chandigarh.

7. Menon, Mohandas Balkrishna. *Evolving a multi media approach to teaching at post-graduate level.* MSU, Baroda.

8. Radha, K.V. *A comparative study of the personality characteristics of high and low success science teachers in teacher training.* U Ker, Trivandrum.

9. Rangan, S.C.B. *Validity of age, socio economic belonging and dietary type as somatotype determinants in boys of secondary schools.* Bangalore U.

10. Raveendranathan, A.K. *A comparative study of the impact of medium of instruction on science achievement, science interest and mental health status of secondary school students.* U Ker, Trivandrum.

11. Shakuntala, M.A. *A method for classification of girls in secondary schools of Bangalore City.* Bangalore U.

12. Talesra, Hemlata. *Higher education among women: An analysis of the situation of higher education at a district level.* MSU, Baroda.

13. Thakker, R.C. *Study of effect of different microteaching skills upon general teaching competency of primary trainees* Saur U, Rajkot.

Commerce

1. Aggarwal, Govind Lal. *Madhya Pradesh mein kararopan.* Vikram U, Ujjain.

2. Bidawat, Banwari Lal. *Cost profit analysis of sheep and wool industry in Rajasthan.* U Raj, Jaipur.

3. Pal, Santosh Kumar. *The current ratio and its significance under Indian conditions.* U Calcutta.

4. Ramaseshan, B. *Effective allocation of marketing costs under Indian conditions: An analytical study.* IIT, Bombay.

5. Saini, Baloo Ram. *Cost profit analysis of copper industry in Rajasthan.* U Raj, Jaipur.

6. Siddaiah, T. *Social banking on Chittoor District.* SVU, Tirupati.

7. Thiripal Raju, M. *Behaviour of secutity prices in India.* IIT, Bombay.

Home Science

1. Feroza Sultana. *A study of female labour force participation in development: Its extent and impact on family living in Rural Bangladesh.* MSU, Baroda.

Management

1. Dharma Rajan, P.G. *A study of the cost structure of cashew industry in Kerala, Karnataka and Tamil Nadu.* U Cochin.

CALENDAR OF EVENTS

Proposed Dates of the Event	Title	Objective	Name of the Organising Department	Name of the Organising Secretary/Officer to be contacted
May 13-June 15, 1985	UGC sponsored All India Summer School in Ocean Sciences	To kindle an awareness amongst university and college teachers of the range and variety of Ocean Science as a multi-disciplinary branch of learning	School of Marine Sciences, University of Cochin	The Director, School of Marine Sciences, University of Cochin
June 21-23, 1985	All India Symposium on Animal Behaviour & 14th Annual Conference of the Ethological Society of India.	—	Department of Zoology The New College, Madras	Dr. Sultan A. Ismail Organising Secretary.
August 17-25, 1985	Summer School on Primary and Special Education in Denmark and Sweden	To give people from abroad an insight in special subjects through lectures, study visits and discussions	The Danish Institute, 2 Kudtrovet DK 1175 Copenhagen Denmark	Mr. Per Himmelstrup General Secretary
December 12-14, 1985	International Seminar on Environment Impact Assessment of Water Resources Projects	Water Resources Development Training Centres, University of Roorkee, Roorkee.	To create an awareness among engineers planners and scientists of the environmental issues in water resources development issues.	Dr. U.C. Chaube, Organising Secretary
June 26, 1985 to April 19, 1986	Seventh Faculty Development Programme in Management	A programme for management teachers and trainers	Indian Institute of Management, Ahmedabad	Shri A.H. Kalro, Chairman, Faculty Development Centre
July 15-19, 1985	Short term Course on Geo Data Base for Resources and Remotely Sensed Data Analysis	To expose the concept of Data Base Approach towards handling and analysing the Remotely Sensed and Land-based information for effective planning and development at different levels.	Centre of Studies in Resources Engineering, IIT, Bombay	Dr. S. Viswanathan, Convener
November 11-30, 1985	Data Analysis Workshop for the Medical Sciences	To acquaint the participants with data analysis techniques.	Indian Statistical Institute Calcutta.	Shri T. Krishnan, Organising Secretary
December 3-5, 1985	Third Annual Conference of the Indian Society for Medical Statistics	To provide a forum for presentation of work in the application of statistics to medical research and practice.	Indian Statistical Institute Calcutta.	Shri T. Krishnan, Organising Secretary

Award of Prizes on Original Books in Hindi under

Financial Literature Awards Scheme

(For original books in Hindi)

The Government of India, Ministry of Finance, with a view to encouraging writing of books in Hindi will award cash prizes for original books in Hindi on the following subjects :

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(b) Indirect Taxes
(c) Banking
(d) Life Insurance
(e) General Insurance
(f) Currency and Coinage
(g) Public Finance
(h) Exchange Control
(i) Sales Tax
(j) Narcotics
(k) Gold Control
(l) Foreign Aid

Note : Books on financial matters other than specifically mentioned above will also be considered.

PRIZES

First Prize : Rs. 5,000 **Second Prize** : Rs. 3,000 **Third Prize** : Rs. 2,000

The decision of Ministry will be final in respect of all the matters connected with the award of prizes and no correspondence will be entertained in this regard.

Eligibility : This award of prizes is for original books in Hindi written during the financial year 1984-85. The awards (Puraskars) will be given to Indian citizens only. Public servants including Govt. employees, working in or under the Ministry of Finance and the organisations under its control as well as those employed in the Indian Audit Department will also be eligible to compete for the awards in question.

Last date and address for sending entries : Writers should send six printed or typed copies of the books alongwith an application in the prescribed form. The competitors will also be required to submit six copies of the summary of the subject of the each entry. The entries and the application form duly filled up should be sent to the Deputy Secretary/Director (Admn.) and Secretary (Financial Literature Awards Scheme), Ministry of Finance, Deptt. of Revenue, North Block, New Delhi latest by 30 June, 1985. The books submitted after the prescribed date will not be accepted for award. The application form and other conditions can be obtained from the above address.

davp 531(229)/84

JAWAHARLAL NEHRU UNIVERSITY NEW DELHI

ANNOUNCEMENT FOR ADMISSION 1985-86

The University will hold Entrance Examination for admission to various programmes of study for the year 1985-86 in 21 undermentioned Centres spread over the country on 24th, 25th and 26th May, 1985 and as per details given below:

1. Ahmedabad 2. Bangalore 3. Bhopal 4. Bhubneshwar 5. Bombay 6. Calcutta 7. Chandigarh 8. Cochin 9. Dehradun 10. Delhi 11. Gauhati 12. Hyderabad 13. Jaipur 14. Jammu 15. Lucknow 16. Madras 17. Nagpur 18. Patna 19. Ranchi 20. Shillong 21. Vijayawada.

SCHOOLS AND PROGRAMMES OF STUDY

I. SCHOOL OF INTERNATIONAL STUDIES

(i) **M.Phil./Ph.D.** in International Politics, International organisation. Disarmament Studies, Diplomatic Studies, International Legal Studies, International Trade & Development, South Asian Studies, South-East Studies, Central Asian Studies, Chinese Studies, Japanese and Korean Studies, West Asian and North African Studies, Sub-Saharan African Studies, American Studies, Latin American Studies, West European Studies and Soviet & East European Studies.

(ii) **M.A. (Two-year) :** Politics (International Studies)

II. SCHOOL OF LANGUAGES

(i) **Ph.D.** in Persian, Russian, Linguistics, Japanese and Philosophy (Modern Western Philosophy only).

(ii) **M.Phil./Ph.D.** in French, Hindi, Urdu, German & Spanish.

(iii) **M.Phil.** in English.

(iv) **M.A. (Five-Year Integrated Programme)** (with entry points in 1st & 4th year) French, German, Russian, Chinese, Spanish & Japanese. Although the students are enrolled for Five Year Integrated Programme, they will also be awarded Bachelor's degree after successful completion of three years of course work.

(v) **M.A. (Two-Year)** in Arabic, Persian, Hindi, Urdu, Linguistics & English.

(vi) **Pre-Degree Diploma (one-year intensive programme)** in Pushtu, Bahasa Indonesia, Uzbek & Korean.

III. SCHOOL OF SOCIAL SCIENCES

(i) **M.Phi., Ph.D. :** The curricular and research work is organised on an inter-disciplinary basis at centres each with a focus on some major problems of study. Candidates will be admitted to the following centres:

1. Economic Studies & Planning 2. Historical Studies 3. Political Studies, 4. Regional Development, 5. Social Systems, 6. Educational Studies, and 7. Social Medicine ;& Community Health.

(ii) **Ph.D. Programme for Physicians :** The Centre of Social Medicine & Community Health of the School also admits candidates who hold MBBS degree and have completed one year's house job or its equivalent to Ph.D. programme for physicians in addition to the M.Phil./Ph.D.programme for social scientists.

(iii) **Master of Community Health (MCH) :** The programme is open to those with Master's degree in Nursing with one year's experience in Community Health Nursing.

(iv) **M.A. (Two-year):** Economics, Geography, History, Political Science & Sociology.

IV. SCHOOL OF LIFE SCIENCES

Admission to the School is open to candidates from both Biology & Non-Biology streams, with adequate provision for remedial courses for Non-Biology students.

(i) **M.Phil./Ph.D. :** Course work & research facilities are available in modern areas of Life Sciences.

(ii) **M.Sc. in Life Sciences (Two-year).**

V. SCHOOL OF ENVIRONMENTAL SCIENCES

M.Phil./Ph.D. : The programmes of the School are interdisciplinary in nature and this year research facilities are available in following areas: (1). The Applications of Physics (experimental & theoretical) and applied mathematics to environmental systems (2). Mineral deposits and Resources, Geochemistry, Sediment processes, Oceanography (3) Environmental Pollution, Management and Monitoring, Waste Recycling, Environmental Impact Assessment and (4) Ecology & Environmental Impact Analysis, Biochemistry Toxicology, Biophysics, Genetic Engineering.

VI. SCHOOL OF COMPUTER & SYSTEMS SCIENCES

(i) **M.Phil./Ph.D. :** The School conducts academic programmes leading to the degree of M.Phil. and Ph.D. in diverse aspects of Computer & Systems Sciences.

(ii) **Master of Computer Applications (MCA) 3-year programme :** The MCA programme is designed to provide necessary theoretical background and practical experience which would enable the students to develop computerised information system as well as to adequately equip them for computer applications in science and engineering to meet the growing manpower requirements in data processing.

VII. M.Sc. (2 YEAR) IN BIOTECHNOLOGY

The M.Sc. programme in Biotechnology is being jointly offered by the Faculty of the School of Life Sciences and School of Environmental Sciences.Biotechnology is a newly emerging multi-disciplinary area on the educational scene and the M.Sc. programme has been developed to meet the growing demand for trained manpower for any meaningful biotechnology activity in the country. The two-year M.Sc. biotechnology programme is designed to expose the students to recent exciting developments in the area of genetic engineering and biotechnology and their exploitation to industry, agriculture and medicine.

RESERVATIONS:

22½% (15% for SC and 7½ % for ST) and 3% of seats are reserved for SC/ST and Physically Handicapped candidates in all programmes of study.

SC/ST and Physically Handicapped candidates who have passed the respective qualifying examination irrespective of their percentage of marks are eligible to apply for admission and taking entrance examination.

HOW TO APPLY:

Application form together with detailed instructions including eligibility conditions etc. for admission to each programme of study can be had either personally from the office of the Deputy Registrar (Admissions) on cash payment of Rs. 2/- per set of application form or through post by sending request along with crossed Indian Postal Order for Rs. 8.50 payable to Jawaharlal Nehru University, New Delhi, to cover the cost of one set of application form and postage, alongwith a self-addressed envelope of the size 28cm × 13cm to the Deputy Registrar (Admissions) Jawaharlal Nehru University, New Mehrauli Road, New Delhi-110067.

There being different forms for different programmes of study it is essential that the candidate indicates clearly in his/her request as well as on the self-addressed envelope the name of programme of study for which the form is required.

Since a candidate can apply in not more than three disciplines/subjects, only one application form need be submitted indicating all the three options in the specified place in the same form.

LAST DATE FOR ISSUE OF APPLICATION FORMS : 8th April, 1985.

LAST DATE FOR RECEIPT OF COMPLETED APPLICATION FORMS : 15th April, 1985.

Note :

1. Candidates who are due to appear in the respective qualifying examination prescribed for eligibility for admission to a particular programme before July 22, 1985 are also eligible to sit in the entrance examination. Their admission will, however, be subject to their securing the prescribed percentage of marks in the qualifying examination and as per conditions laid down in this regard.
2. The candidates who have already submitted their completed application forms for appearing in the entrance examination scheduled for February 8-11, 1985 need not apply again as their applications will be automatically considered for the re-scheduled entrance examination to be held now from May 24 through 26, 1985.
3. Admissions to part-time programmes of study will be notified separately in May, 1985.

1	2	3	4
Government Rules.	and Water Engineering and Agricultural Process Engineering		3. Ph.D. in a subject related to the concerned field. 4. At least 10 years of experience of teaching/research/extension education in the field of Agricultural Engineering of which five years of experience must be in the concerned specialised subject as Associate Professor or its equivalent post. 5. Period spent under the Post Graduate training except inservice post-graduate training will not be considered as experience. 6. **Age** : Below 55 years Age relaxable.
3. Associate Professor Rs. 1200-50-1300-60-1600-Ass-60-1900 in addition to other allowances as per State Government Rules.	Agril. Engineering including disciplines of Mechanical Engineering Farm Machinery and Power, Soil and Water Engineering and Agricultural Process Engineering	4	**Essential** 1. Second Class Bachelor degree in the concerned faculty. 2. Second Class Master degree in the concerned field. 3. Ph.D. in a subject related to the concerned field. 4. At least 7 years of experience of teaching/research/extension education in the field of Agricultural Engineering of which three years of experience must be in the field of concerned specialized subject as Assistant Professor or its equivalent post. 5. Period spent under Post-graduate training except inservice Post-Graduate training will not be considered as experience. 6. **Age** : Below 55 years Age relaxable.
4. Assistant Professor Rs. 700-40-1100-50-1300-Ass-50-1600 in addition to other allowances as per State Government Rules	(a) Mechanical/ Civil Electrical Engineering (b) Agricultural Engineering including Farm Machinery and Power; Soil and Water Engineering and Agricultural Process Engineering.	5	**Essential** 1. Second class Bachelor degree in the concerned faculty. 2. Second class Master degree in the concerned field. 3. At least 2 years of experience after M.Sc. degree in the teaching/research/extension education. 4. Period spent under Post-graduate training except inservice Post-graduate training will not be considered experience. 5. **Age** : Below 55 years. Age relaxable.

Note : Notwithstanding anything contained in the above rules relaxations in individual case in respect of degrees or class of degrees, experience and age etc. will be considered by the Board of Management on the recommendation of the Selection Committee for the posts of Principal, Professor, Associate Professor and Assistant Professor.

Application forms and other terms and conditions can be had from the Registrar, Gujarat Agricultural University, Sardar Krushinagar-385506, District-Banaskantha, on each payment of Rs. 2/- (Money orders will not be accepted) or by sending crossed Indian Postal Order of equal value issued in favour of "Comptroller," Gujarat Agricultural University, Sardar Krushinagar, alongwith the self addressed envelope (23 x 11cms.) affixed with Rs. 1-30 paise postage stamps.

The candidates already in the service of this University have to apply through their respective officers in prescribed form with six copies of authenticated bio-data without I.P.O. All candidates should send their application through proper channel. All candidates called for interview will have to attend the same at their own cost.

1. The last date for receiving applications complete in all respect is **22-4-1985.**
2. Incomplete applications will not be considered.
3. The University reserves their the rights to fill up or not to fill up any or all the posts and to give or not to give appointment to the candidates selected by Selection Committee.
4. Canvassing in any form will completetely disqualify a candidate for employment under this University.
5. Reservation for schedule tribe, schedule caste candidates, socially and economically backward classes, candidates are also available as per Gujarat Agricultural University rules in the above posts. While recruiting to the posts mentioned above if persons belonging to the reserved categories who are suitable for appointment are not available for being selected for vacancies reserved for such categories, such vacancies shall be filled by selection of candidates belonging to other categories as per rules in force from time to time. Applicants belonging to SC/ST Socially and Economically backward classes (Baxi Commission) are required to produce certificates in the prescribed form issued by the authorities empowered to issue such certificate in support of their claims alongwith their application.

R.J. Patel
REGISTRAR

DIBRUGARH UNIVERSITY
DIBRUGARH
ESTABLISHMENT BRANCH
Advertisement No. 1/85

Applications are invited for the following posts:

1. Senior Accounts Assistant	One
For University Services and Instrumentation Centre	
2. Senior Scientific Officer	One
3. Senior Technical Assistant	One
(i) Technician (C) (One each for Mechanical Electronics and Glass Blowing).	Three
(ii) Technician (B) (One each for Mechanical and Glass Blowing)	Two
(iii) Technician (A) Electronics.	One

Essential qualifications and Scale of Pay

1. Senior Accounts Assistant : Rs. 420-15-525-EB-20-625-EB-25-750/- p.m.

(i) Graduate of recognised University with 5(five) years working experience in Accounts either in an Educational Institution or in a Government Semi-Government Organisation. Commerce Graduate should be preferred.

2. **Senior Scientific Officer** : Rs. 1100-50-1600/-.

(i) At least Second Glass Post-Graduate degree in Engineering or Science with 5 years experience in R&D of instruments or in operation, repair and maintenance of modern instruments.

3. **Senior Technical 'Assistant** : Rs. 550-25-750-(EB)-30-900/-.

(i) At least Second Class B.E./B. Tech/M.Sc. Or a diploma in Engineerring Or Electronics/B.Sc. with 3 years experiences in operation of modern instruments and their repair and maintenance assistance in R&D in instrumentation (candidates will be tested for their aptitude in instrumentation).

(i) **Technician(C)**: Rs. 380-12-500(EB) 15-560/-

(a) Mechanical : Certificate Course from I.T.I. with 7 (seven) years experience.

(b) Electronics : Certificate Course from I.T.I. in Electronics/Electrical Engineering with 5 years experience.

(c) Glass Blowing: 10 years schooling and 4 years experience.

(ii) **Technician** (B) : Rs. 320-8-400-10-450/-.

(a) Mechanical : Certificate Course from I.T.I. with 5 years experience.

(b) Glass Blowing : 10 years schooling and 2 years experience.

(iii) **Technician** (A) : Rs. 225-5-260-6-290-(EB)-6-308/-

Electronics : Certificate Course from I.T.I. in Electronics/Electrical Engineering.

Six copies of application in plain papers giving full bio-data including (1) Name in full (in block letters), (2) Father's name, (3) Date of birth, (4)(a) Permanent address, (b) Present address, (5) Present occupation, if any, (6) Detailed academic career from Matriculation/Higher Secondary/High School Leaving Certificate Examination onwards showing Division/Class, aggregate percentage of marks, School/College/University from which appeared (attested copies of marksheets, Certificates should be enclosed), (7) Details of appointments held with designation, duration and nature of works and name of employers, (6) Name and address of two referees not related to the candidate together with an application fee of Rs. 5/- (Rupees five) and Rs. 3/- (Rupees three) for the post No. 4 by CROSSED INDIAN POSTAL ORDER drawn in favour of the Registrar, Dibrugarh University, should be sent in a sealed cover superscribed 'Application for the Post of (Name of the post applied for), addressed to the Registrar, Dibrugarh University, Dibrugarh to reach him not later than **10-4-1985.**

The number of the advertisement and name of the post applied for must be referred to in the application. Persons in employment should apply through proper channel or with a 'No objection certificate' from the present employer. Application not in conformity with the above requirements will not be entertained.

Candidate will be required to appear at an interview if and when called for but no T.A. will be admissible for the purpose.

Dr. D.H. Goswami
REGISTRAR

THE UNIVERSITY OF BURDWAN

RAJBATI : BURDWAN
WEST BENGAL

Advertisement No. 10/84-85

Dated : 22 March, 1985

Applications in the prescribed form are invited for the following posts in the approved scales of pay (viz Reader—Rs. 1200-50-1300-60-1900-/ and Lecturer—Rs. 700-40-1100-50-1600/-) plus Dearness and other allowances and pensionary benefits according to the Statutes of the University.

A. Reader in English : One post
B. Reader in Commerce : : One post
C. Lecturer in Economics : One post (temporary)

Minimum Qualifications

For **Readership**

Good academic record with a doctoral degree or equivalent published work. Evidence of being actively engaged in (*i*) research or (*ii*) innovation in teaching methods or (*iii*) production of teaching materials.

About five years' experience of teaching and/or research provided that at least three of these years were as Lecturer or in an equivalent position.

This condition may be relaxed in the case of candidates with outstanding record of Teaching/Research.

For **Lectureship**

(a) A Doctorate's Degree or Research Work of an equally high standard; and

(b) Good academic record with at least Second Class (C in the seven point scale) Master's Degree in a relevant subject from an Indian University or an equivalent degree from a foreign University.

Having regard to the need for developing interdisciplinary Programmes, the degrees in (a) and (b) above may be in relevant subjects.

Desirable Qualifications

Specialisation or Proficiency

For A : Shakespeare Criticism and Scholarship/Principles of Literary Criticism (Plato to Sidney)/Satire (Prose & Verse)—Dryden to Byron.

For B : Any branch of the Subject.
For C : Statistics and Econometrics, And International Economics.

The Executive Council may on the recommendation of the appropriate Selection Committee, waive any of the aforesaid requirements in view of the candidate's specialised knowledge in the subject. The choice of the Committee may not necessarily be confined to those who apply formally. **Higher initial pay may be considered in appropriate cases.**

For application forms and other particulars please apply to the Registrar, Burdwan University, Rajbati, Burdwan with a self-addressed stamped (60 paise) envelope (9"x4").

Last date for submission of application with the requisite fee of Rs. 5/- is **12-4-1985.**

P. Banerji
REGISTRAR

THAPAR INSTITUTE OF ENGINEERING & TECHNOLOGY

PATIALA-147001

Applications are invited for the posts of Lecturers in Humanities and Sciences as per details given below:—

1. English, Psychology or Sociology. Economics with specialisation in quantitative methods for M.C.A. Course.
2. Physical, Organic or Inorganic Chemistry.
3. Theoretical, Nuclear or Solid-State Physics.

Pay scales, minimum qualifications and experience for the posts are as approved by U.G.C. The above posts have been created to strengthen the programmes of teaching and research in humanities and sciences. Besides facilities of the Institute, the facilities of Thapar Corporate R&D Centre located on the campus are also available to teachers and postgraduate students for research. Persons with Ph.D. degree and aptitude for research will be preferred, and those having required experience and outstanding academic record may be appointed as Assistant Professor.

Full details of minimum qualifications and experience for the posts and application forms may be obtained by writing to the Administrative Officer. Applications on prescribed form or on plain paper giving full particulars (including names and addresses of three referees) accompanied by Cross Indian Postal Order for Rs. 5/- in favour of Administrative Officer, Thapar College of Engineering payable at Patiala should reach the Principal by **20-4-1985.**

INDIAN INSTITUTE OF SCIENCE

BANGALORE-560012

Advertisement No. R(IA) 308-8/85
Dated : 8th March 1985

Applications in the prescribed form are invited from candidates belonging to Scheduled Tribes for the post of LECTURER in the area 'Structural Engineering' in the Civil Engineering Department at the Institute in the grade Rs. 700-40-1100-50-1600 plus allownces admissible at Central Government rates prevailing at the Institute from time to time. Emoluments at the minimum of the scale total to Rs. 1927.95 p.m. (including House Rent Allowance).

Qualifications and Experience

Essential

Master's degree in Civil Engineering with specialization in Structural Engineering with three years Research/Teaching/Design experience (excluding the time spent in acquiring the post-graduate degree).

Desirable : Ph.D. Degree.

Job Description

Required to teach and carry out research in the area of concrete materials, concrete structures/structural dynamics/computer aided design.

Reservation

The post of Lecturer is reserved for candidates belonging to SCHEDULED TRIBES only.

Relaxation

The stipulation regarding the number of years experience is relaxable at the discretion of the competent authority in the case of candidates possessing exceptionally good record and outstanding capabilities.

Tenure of Appointment

Normally, all new appointments at the Institute are made on contract for a period of five years including an initial probationary period of one year. However, it is open to the authorities to consider continuing appointments till the age of superannuation. In the later case, the period of probation will be two years.

General

Request for applications from the SC/ST candidates accompanied by a duly attested copy of the caste certificate obtained from a competent authority together with a self-addressed stamped (Rs. 3.30) envelope of the size of 28 cms. × 18 cms. should be sent to the Registrar, Indian Institute of Science, Bangalore-560012.

The last dates are :

(a) For issue of applications forms : **12-4-1985**

(b) For receipt of completed application forms : **30-4-1985**

Applicants in the service of Government, quasi government, government aided or similar institutions should apply through proper channel. Otherwise, their applications will not be considered.

It shall be open to the Selection Committee for a higher post to recommend a person for a lower post if a suitable candidate for the higher post is not available.

Due consideration will be given to candidates who are physically handicapped provided they are academically/scientifically sound and well qualified and generally comparable to others.

Higher starting salary may be considered to candidates with exceptional merit.

Kindly quote the advertisement no. and date in all corespondence. Candidates should ensure that applications are complete in all respects.

Detailed terms and conditions of appointment will be supplied along with the application forms.

REGISTRAR

INDIAN INSTITUTE OF SCIENCE

BANGALORE-560012

Advertisement No. R(IA) 308-10/85
Dated : 15th March, 1985

Applications in the prescribed form are invited for the post of ASSISTANT PROFESSOR in the thrust area of Metal Processing under the UGC Special Assistance Programme in the Department of Metallurgy at the Institute, in the grade Rs. 1200-50-1300-60-1900 plus allowances at Central Government rates prevailing at the Institute from time to time. Emoluments at the minimum of the scale total to Rs. 2615.00 per month excluding House Rent Allowance. (HRA maximum payable is 15% of pay limited to Rs. 400/-, subject to the employee meeting upto 10% of pay or on a flat rate of Rs. 159.75).

Qualifications and Experience
Essential

Ph.D. in Metallurgy/Materials Science with at least 2 years of experience.

Desirable

Published work of high standard. Ability to organize research groups and undertake sponsored projects independently and guide students at the Ph.D./M.Sc. level.

Areas of specialisation for the post

Metal extraction and Refining/Mineral Processing/Process Modelling/Ceramics.

Job Description

The selected candidates would devote their attention to contribute towards developing the Departmental activities in the main thrust area identified by taking part in teaching and laboratory work, guidance/supervision of research students, participating in existing research programmes, conducting independent research wrok in the areas identified.

Relaxation

The stipulation regarding the number of years experience is relaxable at the discretion of the competent authority in the case of candidates possessing exceptionally good record and outstanding capabilities.

Tenure of Appointment

Normally, all new appointments at the Institute are made on contract for a period of five years including an initial probationary period of one year. However, it is open to the authorities to consider continuing appointments till the age of superannuation. In the later case, the period of probation will be two years.

General

Application forms (six copies) can be obtained from the Registrar, Indian Institute of Science, Bangalore-560012, on requisition. Each request for application forms should be accompanied by a crossed Indian Postal Order for Rs. 5/- (non-refundable) made payable to the Registrar, together with a self-addressed stamped (Rs. 3.30) envelope of the size of 28cms × 18cms. The payment of application fee is exempted in the case of candidates belonging to Scheduled Castes/Scheduled Tribes on production of certificate from a competent authority.

The last dates are:

(a) For issue of application forms : **13-4-1985.**

(b) For receipt of completed application forms : **30-4-1985.**

Applicant in the service of Government, quasi-Government, Government-aided or similar institutions should apply through proper channel. Otherwise, their application will not be considered.

It shall be open to the Selection Committee for a higher post to recommend a person for a lower post if a suitable candidate for the higher post is not available.

Due consideration will be given to candidates who are physically handicapped provided they are academically/scientifically sound and well qualified and generally comparable to others.

Higher starting salary may be considered to candidates with exceptional merit.

Kindly quote the advertisement No. and date in all correspondence. Candidates should ensure that applications are complete in all respects.

Detailed terms and conditions of appointment will be supplied along with the application forms.

REGISTRAR

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University News

F-D-52

APRIL 16, 1985

Re. 1.00

Photograph taken on the occasion of the Twenty-Fourth Convocation of the Indian Agricultural Research Institute held in New Delhi on 2nd February, 1985. The Convocation Address was delivered by Shri Buta Singh (third from left), Union Minister for Agriculture and Rural Development.

CLASSIFIED ADVERTISEMENTS

BANASTHALI VIDYAPITH

Advertisement No. 1/85

Applications are invited for the following positions:

Dept. of English : Professor-1, Reader-1, Lecturers-2.

Dept. of Home Science : Professor-1 (Child Development), Reader-1 (Child Development) Lecturers-3 (Child Development-1, Home Management-1, Clothing and Textile-1)

Dept. of Music : Professor-1, (Vocal/Instrumental-Hindustani) Lecturers-3 (Vocal-2, Instrumental-1)

Dept. of Drawing & Painting : Professor-1, Reader-1, Lecturer-1.

Dept. of Education : Professor-1, Lecturers-2 (Home Science Teaching-1, Sanskrit Teaching-1)

Dept. of Sanskrit & Vedic Studies : Professor-1, Lecturers-2.

Dept. of Sociology : Professor-1, Lecturer-1.

Dept. of Computer Science : Professor-1, Reader-1, Lecturer-1, (Computer/Electronics), Programmer/Technical Assistant-2 (Computer/Electronics)

Dept. of Chemistry : Lecturers-2 (Organic/Inorganic)

Dept. of Mathematics & Statistics : Lecturers-2 (in Statistics)

Dept. of Textile Designing: Reader-1, Lecturer-1.

Dept. of Dance : (Kathak, Manipuri-Bharat Natyam) Reader-1, Lecturers-2.

Qualifications

As prescribed by the University Grants Commission.

Pay Scale : (With approximate initial emoluments in brackets)

Professor : 1500-60-1800-100-2000-125/2-2500 (2730)/-.

Reader : 1200-50-1900 (2430/-)

Lecturer : 700-40-1100-50-1600 (1729/-)

Programmer/Technical Assistant : 700-40-900-40-1100-50-1300 (1729/-)

Dearness Allowance at Rajasthan Government rates. Provident Fund, Gratuity-cum-Insurance, Group Insurance benefits on confirmation.

Notes

1. Selection Committee may recommend names for the posts of Professors even though they might not have applied.
2. Other things being equal women preferred.
3. Teachers are expected to become habitual wearer of KHADI on appointment.
4. I Class fare for the post of Professor and II Class fare for others will be paid to persons called for interview.
5. Persons who have applied in response to advertisement No. 14/84 need not apply again.

Application on prescribed form in seven copies must reach the Secretary, Banasthali Vidyapith, P.O. Banasthali Vidyapith (Rajasthan) 304022 by **15th May, 1985**. Blank forms can be obtained by sending postal order of Rs. 20/-

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ALIGARH MUSLIM UNIVERSITY

ALIGARH

Advertisement No. 46/84-85

Applications on the prescribed form are invited for the following posts:

1. **Professor of Business Administration, Department of Business Administration.**

Scale of Pay : Rs. 1500-60-1800-100-2000-125/2-2500 plus allowances.

Qualifications

(a) A first or a high second class Master's degree in the subject concerned of an Indian University or an equivalent foreign qualifications.

(b) A research degree of a Doctorate standard or published work of a high standard; and

(c) At least ten years experience of teaching post-graduate classes and some experience of guiding research.

2. **Reader in History (Economic History of Medieval Indian based on Statistical and Quantitative Analysis/ History of Medieval Indian Art) Department of History.**

Scale of Pay : Rs. 1200-50-1300-60-1900 plus allowances.

Qualifications

I. Essential

(a) A first or a high second class Master's degree in the subject concerned of an Indian University or an equivalent foreign qualifications.

(b) A research degree of a Doctorate standard or published work of a high standard; and

(c) At least five years experience of teaching post-graduate classes and some experience of guiding research.

II. Desirable

Master's degree in Statistics or Mathematics, preferably with Certificate or Diploma in Statistics/Master's degree or Diploma in Fine Arts.

Note

1. The research work of the candidate should have been in either of the two fields indicated in the title of the post.
2. Those candidates who have applied in response to Advertisement No. 12/84-85 dated 12th July, 1984 need not apply again. They will be considered on the basis of their previous applications if eligible.

3. **Reader in West Asian Studies (Economics) Centre of West Asian Studies.**

Scale of Pay : Rs. 1200-50-1300-60-1900 plus allowances.

Qualifications

I. Essential

(a) A first or a high second class Master's degree in the subject concerned of an Indian University or an equivalent foreign qualifications.

(b) A research degree of a Doctorate standard or published work of a high standard; and

(c) At least five years experience of teaching post-graduate classes and some experience of guiding research.

II. Desirable

First hand knowledge of current West Asian Economic trends. Working knowledge of Arabic or any other West Asian Language.

4. **Lecturer in General Education (Life Sciences) General Education Centre**

Scale of Pay : Rs. 700-40-1100-50-1600 plus allowances.

Qualifications

I. Essential

(a) A Doctor's degree or research work of an equally high standard; and

(b) Consistently good academic record with first or high second class (B in the seven point scale) Master's degree in Life Sciences i.e. Bio-Chemistry, Botany or Zoology or an equivalent degree of a foreign University.

II. Desirable

Experience of teaching General Education in a recognised Institution.

Higher initial start may be given to candidates possessing exceptional qualifications and experience. Candidates interviewed may be paid contribution towards their T.A. equal to one single second class Railway fare only.

Prescribed application forms and instructions may be had from the Assistant Registrar (Selection Committees), Registrar's Office, Aligarh Muslim University, Aligarh on payment of Rs. 5/- to be deposited in the Cash Section, Finance Office, A.M.U., Aligarh or through an Indian Postal Order payable to the Finance Officer, Aligarh Muslim University, Aligarh either personally or by sending a self-addressed stamped envelope of 23x10 cms. **Last date for receipt of applications is 30th April, 1985 (during office hours). Incomplete applications and those received late will not be considered.**

Note : **Suitable persons may be kept on panel for future appointment.**

I.H. Malick
REGISTRAR

UNIVERSITY NEWS

VOL. XXIII APRIL 16
No. 15 1985
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Editor :
M. S. RAMAMURTHY

Computerisation and Management of Examinations

Association of Indian Universities (AIU) in co-operation with National Institute of Planning and Administration (NIEPA), New Delhi has launched a series of workshops to train Registrars and Controllers of Examinations from Universities in the area of management and computerisation of examinations. The first of the series of workshops was held at NIEPA, New Delhi from 21st to 24th March, 1985. This was a unique workshop to bring together Registrars and Controllers of Examinations from various universities to exchange their experience in conduct of examinations and also deliberate about issues related to pre-conduct, conduct and post-conduct stages of examinations.

Welcoming the participants to the workshop from 26 universities in the northern region, Dr. Jagdish Narain, Secretary, AIU drew the attention of the participants to the decision of the AIU Standing Committee to hold special workshops for university administrators in general and Registrars and Controllers in particular in the area of management of examinations. Reiterating the fact that the university system is handling a large number of examinations he felt that computerisation in examinations together with adoption of new management techniques are necessary for all universities. He suggested to the participants that, in addition to sharing their own experiences amongst themselves, they should also try to learn by posing questions in various sessions and also encouraging fruitful discussions. He concluded saying that at the end of the workshop there should be a systematic feedback from the participants to enable the organisers to modify future courses and make them more need-based and relevant.

Inaugurating the workshop, Dr. Sathya Bhushan, Director, NIEPA, pointed out that the man behind the machine (Computer) is much more important, that is the human being who has to use his ingenuity and intelligence to use the computer to achieve speed, accuracy and efficiency of operations. He suggested that most of the activities of the pre-conduct stage right from filling the application forms to allocation of registration numbers, centre-wise allotment of candidates, etc. can be handled by a computer with accuracy and speed. He wondered whether computer would be of any use in the actual conduct of examinations. He however, suggested, that better techniques of management could be of help in this area.

Dr. R.P. Singhal, Executive Director, NIEPA and former Chairman of the Central Board of Secondary Education who had delivered a keynote address on problems faced in mass conducted examinations, elaborated the kinds of problems faced by examination system responsible for conducting a large number of examinations for a large number of students within a short time. He suggested that systems approach and systems management, are necessary in the planning, scheduling and monitoring the system of large scale examining. He narrated the experience of Central Board in the matter of computerisation of the post-conduct stage in preparation of mark-sheets with speed, accuracy and efficiency in the last decade or so. He however felt that the time is ripe for all universities today to resort to computerisation of their examination system.

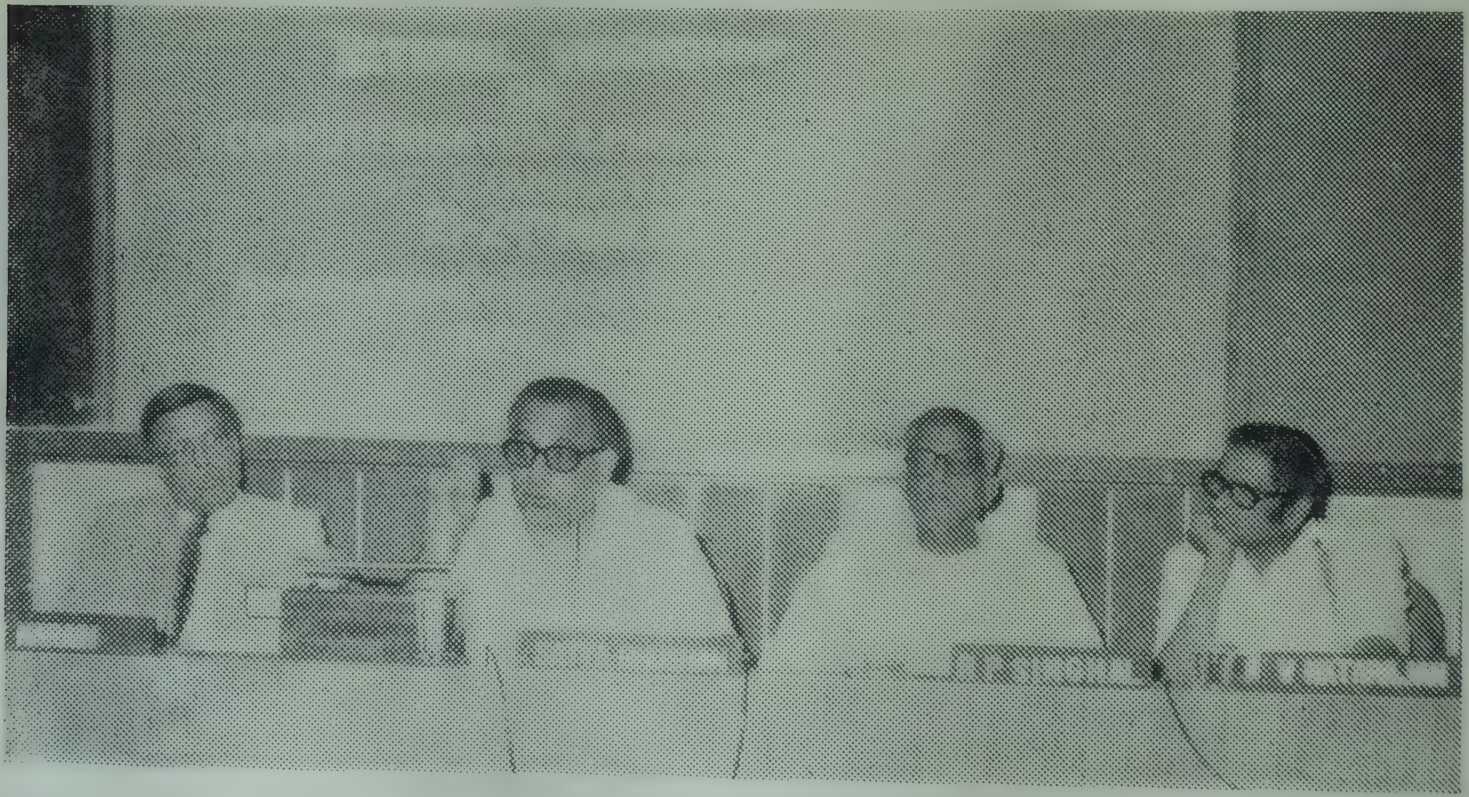
Prof. V. Natarajan, Project Director, AIU outlining the schedule of activities for the 4-day workshop stressed the need on the part of the participants to discuss various issues in small groups and come to a consensus, thus, bringing to it rich experience of each one of these universities. He reiterated the fact that the entire training workshop has been planned on the basis of problems faced by the universities in all the three stages of examinations from the responses to a detailed questionnaire sent in advance to all these universities.

Delivering the keynote address on computerisation in examinations in general and use of computers in particular activities in the pre-conduct, conduct and post-conduct stages of the examination system, Prof. Natarajan familiarised the participants with certain basic terminologies and appealed to them to develop the skills of using a computer in the same way a telephone is used. He talked in length of different software programmes developed by AIU and reproduced in the monograph on 'Computer in Examinations'.

Four microprocessor computers, namely, Eagle Junior, Eagle III, Eagle IV and Alpha which were displayed and several software packages/programmes developed by AIU's Research Cell, put on demonstration, constituted a major part of the workshop. As many as 12 programmes were demonstrated and the participants witnessed these demonstrations and discussed the utility of these programmes. A visit to M/s. Technocrate Business Data Centre was arranged to enable the participants to see data processing of application forms, preparation of lists for various centres and preparation of marks statements using a computer were administered.

Small group discussions were held to go into various issues in the three stages of examinations and conclusions arrived and reported to the group at the end of discussion. A set of recommendations were made by the workshop and some of these are given below : The workshop recommended:

1. to all the Universities through the AIU that computerisation may be adopted at all the three stages of Exam, as far as possible to suit the requirements of the individual universities;
2. to all the universities to adopt uniform pattern of question papers on a three tier pattern comprising (i) objective type; (ii) short answer; (iii) long answer questions; as far as possible, setting and moderation of question papers may be done centrally;
3. that the universities may adopt the coding, randomising and central evaluation for all examinations as far as possible, after providing necessary physical facilities;
4. the UGC/Govt. may provide the necessary financial assistance to instal computers in all the universities and for the creation of necessary posts and training the persons connected with the work:
5. that a central co-ordination committee consisting of COE/Registrar/Teachers/Experts may be constituted with the guidance of AIU/UGC for (i) organising and supervising a central data base unit; (ii) to advise member universities for improving the system; and (iii) to co-ordinate the work on exam reform;
6. that AIU may prepare a manual detailing the procedure for all the stages of Examinations. The AIU may also suggest the staff pattern required by the COE, to assist him in computerisation of exam system;
7. that regional workshops/seminars may be held at least once in a year so that COEs can share their experiences to improve their Exam system;
8. that the examinations should not be considered in isolation and at all stages integrated approach is recommended. The COE should be effectively associated with proper delegation of powers and status to supervise Examinations as given in Govt. of India Ministry of Education letter No. F-12-53/78 (NP-I) dated 10.9.84 making the scale of pay on par with



Dr. Sathya Bhushan, Director, NIEPA, inaugurating the Workshop on Computerisation and Management of Examinations in New Delhi. Seated on his right is Dr. Jagdish Narain, Secretary, AIU, and on his left are : Dr. R. P. Singhal, Executive Director, NIEPA and Prof. V. Natarajan, PD (Exam.), AIU.

professors of University and Registrar. He may be made responsible for all academic matters of university;

9. that the Controller of Examinations and the staff of Examination Section may be oriented periodically on the management techniques that can be implemented in conduct of examinations;
10. that all the Universities may take a recourse to computer in the processing of exam results at whatever stages applicable;
11. that the universities may adopt randomisation of scripts, so that all the examiners valuing the scripts in a paper get approximately the same quality of scripts;
12. that the universities may go in for Central Valuation of the scripts as it has many advantages compared to the traditional method of sending the scripts to their examiners' residences;
13. that use of computer programmes for scaling of marks may be made as it standardises the different standards of marking maintained by the examiners in evaluation of short and long answer questions;
14. that the software package prepared by AIU to improve the quality of the examinations may be used by the Universities making minor variations wherever necessary;
15. that the universities may prepare Questions Banks (Q.B.) so that quality Question Papers can be prepared in short time; care may be taken to print the objective part of the Question paper separately and the students may be asked to mark their correct answers in the specially prepared response sheets and the Question Papers may be taken back after the specified time, say, 30 or 40 minutes;
16. that the AIU may prepare computer stored panels of names of examiners in different subjects;
17. that in order to reduce, if not eliminate the malpractices indulged by the students especially in the objective part, the items may be thoroughly shuffled and different sets of Question Papers may be prepared keeping the same items.

On March 24th, delivering a valedictory address, Mr. Veeraraghvan, Adviser (Education), Planning Commission, commended the pioneering steps taken by AIU, in the matter of introduction of computer in examination system. He suggested that once recommendations are made, the financial implications for implementing in several universities should be prepared and taken up with the Planning Commission, UGC and AIU and the the like to enable these recommendations to be translated into action

AIU proposes to conduct three more courses, one in each region of West, South and East and then consolidate and bring out a Manual of Guidelines for Computerisation and Management of Examinations which will serve as a ready reckoner to all those concerned with large scale examining. ☐

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SHRI RAM COLLEGE OF COMMERCE

MAY
C.F.T.R.I.

Some Steps on the Reform in Higher Education

Z.Y. Hua*

Paper presented at the Conference of Vice-Chancellors of Asia and the Pacific Region held at New Delhi from March, 18 to 21 1985.

The main purpose to force me attending this Conference is to learn experiences from other countries, especially India. So actually, I have not prepared anything to say. But for your request, for improving mutual understanding, I would like to have an opportunity speaking a few words.

There are more than 800 institutes of higher learning in the People Republic of China. Among which 96 are so-called "key universities". And among these key universities 28 are directly belonging to the Ministry of Education, where a substantial amount of human, material and financial resources are relatively concentrated so that they will reach the advanced level more rapidly and become examples for the whole country to follow.

To meet the needs in China's socio-economic development and adapt ourselves to the world's new technological revolution, China's education was continued to readjust by changing the internal structure of education, reforming the educational system, diversifying the forms, types and layers of education and encouraging association between schools and departments of social production.

In China, there is a system including a nationwide entrance examination for university students. But, to encourage the wholesome development of students in a moral, intellectual and physical sense, a system was initiated in 1982 whereby outstanding students who had been commended at the perfectural or provincial level or who had done exceptionally well in sports competitions could be admitted to a university even if their marks were a bit lower than the required level. In a few provinces and municipalities the entrance examination marks of students from the best middle schools were considered with reference to recommendations from their schools. From this year on, Fudan University and a few of other key universities will accept some brightest students only by recommendations from their middle schools without the nation-wide examination.

After the students come in, we grant financial subsidies to needy students. In a certain sense, it shows the superiority of the socialist system. But the practice takes into consideration only the financial circumstances of the students without reference to their academic records and moral performance. Our government worked out new regulations providing for the co-existence of people's scholarship and a people's subsidy, which will gradually change to a system under which the former becomes the main form of financial aid and the latter only supplementary.

You know that in China all the students graduated from universities are despatched by the government to ensure having a job. To guarantee the availability of specialised personnel in rural areas, remote regions, factories and mines and other enterprises, a system of designated enrolment and job placement was introduced in 1983 for some students of agriculture, forestry and medicine and of teachers' colleges. Students from certain area or department generally return to work there upon graduation.

In the past few years, the association between schools and producers has developed in form and substance. The main forms are :

(1) Training people as entrusted by certain institutions or joint operation of schools; More than 80 universities and colleges are collaborating with professional departments and local authorities in running schools or training people as entrusted by the latter. Over 300 institutes of higher learning are providing professional training for cadres.

(2) Long-term Cooperation : Over 20 universities and colleges are cooperating on a long-term basis with municipalities and burgeoning medium-sized and small industrial cities, or with institutions in border regions, in the development regions in provinces where they are located, or in suburban countries. A bigger number of universities and colleges have established links with industries to combine education with scientific research and production.

(3) Joint Scientific Research; Production departments and local authorities join institutes of higher learning in scientific research by providing them with funds.

To emphasize the interpenetration and association among different faculties is also a new trend. In recent years polytechnical institutes have added courses in humanities and social science and some have established departments or disciplines in these

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Vice-Chancellor, Fudan University, Shanghai, China areas. The study of marginal sciences is drawing wide attention. Fully utilising its resources, Fudan University has set up integrated research centres for such advanced sciences as microelectronics, computer science, material science, bio-engineering and energy engineering with the aim of training top-grade cultural and scientific R & D personnel. The University has established some groupings of disciplines integrating humanities with science, dealing respectively with technological sciences, applied mathematics, economics and management. The University has undertaken key research projects and has achieved important results. Moreover, in some of the specialities, we give so-called double bachelor degrees. For instance, anybody who has finished his courses for 3 years in any department of natural science, can pay 2 more years in learning journalism courses. When he graduated he will get two bachelor's degrees, i.e., one for natural science, one for journalism. Experiences have shown that this is very effective to attract students in natural science to learn humanities and social sciences which are both very necessary to have qualified students with a good scientific base.

Now I would like to say a few words about the tendency toward multiplicity. China has a vast territory and a large population consisting of 56 nationalities The many regions and nationalities show great differences in their economy and culture, including the educational level. Thus an important guideline for the development of China's education is to take these differences into account and combine identity with diversity with respect to the structure, content, forms, layers and types of education. China's education has started to progress towards multiplicity and will continue in this direction. Important developments in the past few years include the following :

(1) Examinations for those who have studied college courses on their own : In January 1981, such a system of examinations was officially announced, combining people's independent studies with public assistance. It was first tried out in Beijing. Shanghai, Tianjin and Liaoning provinces. By the first half of 1983 examinations for 37 courses had been given in the three cities plus one province. Out of more than 73,000 participants, 42.8 percent passed the examinations. In November 1982, an article stipulating that the state encourages people to become educated through independent study was written down in China's new constitution. In March the same year a national committee was set up to direct examinations for those studying on their own. By the end of 1983 similar organisations were established in 22 provinces, municipalities and autonomous regions to sponsor examinations on 26 disciplines covering 136 courses.

(2) Schools run with the people's own resources : For a long time, schools, universities and colleges had, in the main, been operated by educational departments at various levels, professional institutions, factories, mines and other enterprises supplemented by those run by collective economic units in rural areas. In recent years schools founded by democratic parties, academic societies, mass organisations and street communities have appeared almost everywhere in the country. Most of the schools are at the primary or secondary school level, but a few are equivalent to a college.

(3) Short-term colleges for vocational training: These colleges are mainly run by the local governments in accordance with their needs. The disciplines and courses are geared to local socio-economic development. The colleges are open to everybody, charge a tuition, but provide no accommodation. Upon graduation the students can be employed by any institution according to their abilities, and the colleges are not responsible for their job placement. The courses may last from two to three years. Such colleges require a small investment and can be developed speedily.

The building of a socialist material and moral civilisation in China requires an increasing number of specialists as well as a steady improvement in the ideological, moral, cultural and technical-scientific quality of the entire working people. More and more people are realizing the importance of training competent people and thus the role of education in socio-economic development. To get the right people for China's economic rise and answer the challenge of the world's new technological revolution, the state has designated education as one of its strategic areas in economic development. And it has announced that the development of education is a precondition for the country's economic rise and the building of a material and moral civilization. The focussing of public attention on education will have a far-reaching influence on its development.

It is very clear that, learning experiences from all other countries, no matter how big or small, is very important for us. I hope this conference can further strengthen the cooperation between the universities in this region and those in our country. I believe it will be successful. □

Shri Buta Singh Addresses Convocation of IARI, New Delhi

Excerpts from the Convocation Address delivered by Shri Buta Singh, Union Minister for Agriculture and Rural Development at the Indian Agricultural Research Institute, New Delhi, on February 2, 1985.

Convocation

"With this convocation, we are adding yet another batch of well trained agricultural scientists to the national pool of top-grade scientific manpower. I congratulate the young scientists receiving their degrees in this convocation. They are indeed fortunate to be the alumni of this distinguished institution and they can justly feel proud of their academic achievement, which is a culmination of their sincere and sustained efforts in the pursuit of science over a period of time. Their efforts and achievements deserve acclaim.

"My dear young scientists, from this day onwards each one of you would not only be an individual person, member of a family and citizen of India, but also member of a profession. You will have very special and significant role to play and will have promises to keep on all these fronts. I would like to draw your attention to what the Director had said when he admitted you to the degree. He had said "I charge you that ever in your life, you prove worthy of the same." I urge upon you to have this message indelibly etched in your memory and to act on it.

"It would also be worth remembering that in enabling you to work for your degree, the nation has made substantial investment on you and the funds for this investment have been contributed by the poor people of India. On a very approximate basis the institutional cost of education per student at an institution like IARI is estimated to be around Rs. 50,000 a year. The nation has made this investment in the hope and belief that the nation would get a higher dividend than what it could, by investing these funds in some other fields of development. You, therefore, owe it to this country and to its people to maximise these dividends through a high degree of relevance and quality of your contributions to the advancement of the nation and the betterment of its people.

"I believe that you are extremely well equipped to make such an effective contribution because apart from receiving high quality theoretical and practical education, your stay at IARI must have also conferred on you another very big advantage. You have lived and studied here as member of a truly national group of young people, and this life must have broadened your social, academic and intellectual horizons to adequately cover the dimensions of national development. Other things being equal, you are expected to more correctly perceive the broad national needs and priorities and fashion your conduct accordingly, no matter where in this vast country you happen to be located as a a professional.

"Now onwards you are going to serve the farmers of this country who constitute 70% of our population and practice the noblest of professions. In defining the aims of life, the Vedas guide us to produce more food which was regarded as the primary objective of human beings in these words:

अन्नं बहुकुर्वीत तद् व्रतम्

"In Atharva Veda, "the distinguished farmers are requested to take the plough and oxen to well-laid fields and to sow the crops for getting the maximum yields by ripening it to the stage of harvesting".

"युनक्त सीरा वि युगा तनोत
कृते योनौ वपतेह बीजम् ।
विराज: श्नुष्टि: सभरा असन्नो
नेदीय इत् सृण्य: पक्वमा यवन्" ।।

"These noble teachings of Vedas were spread to the masses by our monks and saints who wrote devotional poems and verses which could be easily understood by the public at large. In writing such verses Guru Nanak used to derive the similies from agricultural practices. When one of his disciples posed a question as to how a man should achieve salvation, thus spoke Guru Nanak: "The body is the farm, your actions the seed, it is watered by the name of God, in whose hands is the whole earth. The mind is the farmer". Guru Nanak thus gave supreme position to the farmer equating him with the mind which controls the body. You are lucky that now onwards you are going to serve the noblest profession through your scientific efforts.

"It may also perhaps be more than a mere coincidence that you are receiving your professional degrees in the 'International Year of Youth'. In this ancient land of ours, the conditions are now ripe for the youth to spearhead a great national effort to break the age-old shackles of poverty, backwardness and inequality that have held back our country in general and certain segments of our people in particular. As a nation we have to catch up with the most advanced nations of the world, but in this process we have to ensure that all the Indians enter the 21st century together. It simply would not do if only a minority of Indians harvest the fruits of development and the majority keep on lagging behind.

"Though in the recent past I have not been directly concerned with Agricultural Education and Research, I have been closely watching the progress being made in this Sector. I am aware that the contributions of the agricultural scientists have enabled the country to attain a relative self-sufficiency in food production, but our successes have been quite uneven and we still have a long way to go in modernising our agriculture.

"Indian Agriculture has some important features and it is necessary to take note of these features while formulating plans for improving agricultural production in the country. These features are:

(1) The farmers are the ultimate decision makers. They decide what crops to grow, what technology to adopt, which crops to grow under rainfed conditions, when to undertake different farming operations, etc.

(2) Agriculture is a State subject, although historically all the major initiatives in agricultural development have emanated from the Centre.

(3) The pattern of land holding has largely remained unchanged during the recent past. Marginal, sub-marginal and small holdings predominate.

(4) Despite the creation of massive irrigation potential of about 60 million hectares so far, Indian agriculture still remains very vulnerable to the vagaries of monsoon.

(5) Although the existing ground-water potential is estimated at about 26 million hectares, which is about 60 per cent of the ultimate potential, the development is highly uneven.

(6) The pattern of agricultural development, particularly the growth of food-grain production so far has resulted in pronounced regional disparities.

(7) The growth of agricultural production in the past has not been commensurate with the investment in agricultural sector. During the period 1976-77 to 1982-83, the gross irrigated area has been increasing at the rate of 5.6% per annum, diesel and electric irrigation pumpsets have been increasing at the rate of 8% to 9% per annum, the area under High-Yielding Varieties has been increasing at the rate of 7% per annum and fertiliser consumption at 11% per annum. While all inputs (in real terms) put together increased at the rate of 4.1% per annum, the real output increased at about half that rate (2.0%) per annum.

"While the overall performance of agriculture during the Sixth Plan period is encouraging, there are some disquieting features which need attention:

(i) The attainment of Sixth Plan targets in respect of pulses, sugarcane, cotton, jute and mesta is uncertain.

(ii) Cotton production targets have not been reached in any year of the Sixth Plan period.

(iii) The production target of jute and mesta was reached only in one year, i.e. 1981-82.

(vi) The area, production and yield of pulses was the highest in 1975-76 and these levels were not exceeded in any year in the subsequent period. In the case of gram, the highest area and production were in 1975-76 and the highest yield in 1978-79. As regards oilseeds, the highest area under groundnut was in 1971-72, for rapeseed and mustard the peak level of productivity was obtained as far back as 1974-75. In respect of cotton, the highest area was in 1979-80 and peak production and productivity in 1978-79.

(v) An analysis of the long-term growth rate of area, production and yield of principal crops during the period from 1967-68 to 1981-82 reveals that jowar, bajra, small millets, barley, gram, groundnut and sesamum had negative growth rates in area. The production growth rates were negative in respect of bajra, small millets, barley and pulses. The growth rates of yield were negative in the case of gram and pulses. Besides, the productivity growth was slow (less than 1 per cent) in the case of bajra, maize, small millets, tur, sesamum, rapeseed and mustard, total oilseeds, jute and sugarcane.

(vi) The growth rates assumed for the Sixth Plan are unlikely to be achieved in respect of rice, pulses, total foodgrains, sugarcane, cotton, jute and mesta.

"The challenges of the Seventh Plan are therefore, not only bigger but also of a kind different from that of the earlier Plans. The key issues in the Seventh Plan would be:

(a) Improving productivity in rainfed farming ;

(b) Improving productivity in the eastern region, namely, the Gangetic river basin of eastern Uttar Pradesh, Bihar, West Bengal, the coastal deltas of Orissa, Chhattisgarh region of Madhya Pradesh and Brahmaputra valley of Assam;

(c) Increasing production of wheat particularly in the central region;

(d) Increasing overall cropping intensity;

(e) Improving irrigation efficiency;

(f) Strengthening and streamlining agricultural administration;

(g) Improving agricultural production in tribal areas.

"Broadly speaking, there are

the following four production situations for every crop and the strategies will have to vary for every kind of situation.

(i) Where the area as well as the yield of a crop are high (e.g. wheat in Punjab and Western Uttar Pradesh), increased attention should be paid to marketing and price support operations.

(ii) Where the yield of a crop is high but the area is not large, the strategies should be so devised as to increase the area under that crop. High yield obviously shows good agroclimatic conditions for that crop as well as farmer's care and attention to that crop. Examples are: summer groundnut in Orissa, Maharashtra and Gujarat; hybrid cotton in Gujarat, Maharashtra, Karnataka, Andhra Pradesh and Tamil Nadu and boro paddy in West Bengal.

(iii) Where the area under a crop is large but the yield levels are low, efforts should be to increase the yield. This should be strategy for rice in eastern region and for wheat in central region.

(iv) Where both yield and area are low, it is obvious that the crop itself should be replaced by another crop. Therefore, the strategy should be to bring about a change in the cropping pattern.

"In every agro-climatic zone it is the responsibility of the extension system to look for the above situations and initiate appropriate strategies.

"It is needless to say that generation and dissemination of improved technology is very crucial to sustain the growth of agricultural production and that research and extension are the two most important factors influencing the spread of modern technology. Recognition of different farming situations and the need to generate technology suitable for each of them is of relatively recent origin. Under the National Agricultural Research Project, a number of research stations in different agro-climatic zones are being set up and training and visit system of extension is being introduced throughout the country. With the implementation of these two important projects, the State Agricultural Universities have been actively involved with the training of subject-matter specialists of the extension system and the research-extension linkages are being strengthened.

"The IARI has been the national Centre of Growth in respect of agricultural education and research for many decades ever since it was first established at Pusa in 1905 and later shifted to its present site in 1934. This institution has, in fact, served as the mother institution in the establishment of a number of other agricultural research institutes in the country, I understand that at present IARI comprises 21 research divisions and 13 regional research stations, offering post-graduate educational facilities in 16 disciplines. Besides, this institute has been providing academic and research leadership in a variety of ways to the Agricultural Universities.

"However, it should be recognised that substantial facilities and capabilities for higher agricultural education and research have been built up in each state through the establishment of State Agricultural Universities. The Govt. of India are also making large investments for the development of these agricultural universities and also for strengthening their regional research capabilities. It is, therefore, imperative that IARI examines its role in this changing scenario and reorients its priorities in its scientific divisions as well as at its regional research stations. I understand that the ICAR is already seized of this problem and steps are being taken to use the scientific resources of IARI to build up national capabilities in newer areas, such as, biotechnology, genetic engineering, agricultural meteorology and soil and water management. I am also quite aware of the fact that Agricultural research in our country today has become a very large and highly complex undertaking. With the 36 research Institutes of ICAR, 71 co-ordinated projects and the 23 agricultural universities, we have one of the largest systems in the world for agricultural research and education. We have also made great achievements but it should be recognised that what has been achieved so far is only a small fraction of the production potential of Indian Agriculture and there is tremendous scope for further advances. It should also be recognised that with all the progress which the country has made, the average yields of most of the crops are still quite low. I am, however, sure that Indian agriculture can feel proud of making the record production of 151.4 million tonnes of food-grain in 1983-84. The input supply position also has been improved considerably. Fertiliser consumption would be 96.5 lakh tonnes during 1984-85 as against 52.60 lakh tonnes in 1979-80. Pesticide consumption would also go up to 80 thousand tonnes as against 60 thousand tonnes during 1979-80. It is also expected that 54 lakh tonnes of certified seed would be distributed as against 13.7 lakh tonnes. Consumption of power in 1951 for agriculture per thousand hectare of gross cropped area was only 1.5 Kwh while in 1983 it has been 90.0 Kwh. The number of tractors during this period has gone up from 0.09 lakh to 9.23 lakhs, covering a total area of 510 lakh hectares of gross cropped area as against 7 lakh hectares of earlier years. With these advancements, we are expecting to surpass the record food-grain production of 1984-85.

"But we should also take into consideration the fact that our population is growing at about 2.5 per cent per year and by 2000 A.D. our requirement of food-grains would be at least 225 million tonnes, even at the present rate of food consumption which is quite low in comparison to other countries.

"This is a major challenge, not only to the policy makers, the planners and administrators but more immediately to the agricultural scientists also. This problem has to be tackled on several fronts. It is well known that while relatively simple components of a scientific production technology can make significant contributions in increasing crop yields at relatively low levels of productivity, the technology has to be increasingly more sophisticated as the yield levels rise and the problem is to push them still higher.

"In this admittedly difficult situation a major factor for satisfaction is that out of our net sown area of 140.27 million hectares in 1980-81 about 27.7 per cent is under assured irrigation, while the rest is rain-fed. With this vast resource, it should be well within our reach to step up productivity reasonably well to adequately meet our requirements. However, the Indian Agriculture is beset with several constraints restraining its faster growth. Consequently, our productivity still continues to be relatively low even in crops like wheat where we have made large advances. We have over 54% marginal holdings of less than 1.0 hectare. Fertilizer consumption is only 37.6 kg per hectare (1982-83) and wide disparity is observed from State to State. While Punjab leads all other States with over 127 kg per hectare, the north eastern region consumes as low as 1 to 4 kg per hectare. Added to this is the existence of large tracts of problematic and unproductive areas comprising saline and alkaline, semi-arid and cold deserts, water-logged and degraded lands. We have about 7.16 million hectares of land affected by salinity and alkalinity, 12.9 million hectares by land erosion and 35.21 million hectares by water erosion. Poor water management is yet another and most vital limiting factor. Of about 400 million hectare metres of water received through precipitation every year, only 10% is utilized and the rest goes waste. The potential of developed water sources is not fully utilized. We would, therefore, have to make determined efforts on several fronts to improve our agriculture to reach international standards of productivity.

"Another major area to which we have to pay immediate attention is production of pulses and oilseeds. In case of oilseeds, we have not been able to make any significant breakthrough. The compound growth rate of production in the last 15 years has been only 1.35 per cent as compared to 5.6 and 2.31 per cent in wheat and rice respectively. In pulses the total production has shown a downward trend from 11.4 M tonnes to 11.2M tonnes during this period, showing a growth rate of (—) 0.16 per cent. I am aware that ICAR is giving maximum priority to research in these major areas.

"It is also necessary to improve the productivity of the rainfed areas by evolving suitable practices of soil and water conservation, amelioration of problem soils, more efficient use of water resources, increasing use of bio-fertilizers, increased attention to evolution of simple and less expensive, and less hazardous methods of protecting the crops against pests and diseases, and intensification of basic and applied research for increasing the productivity of crops under adveese conditions.

"In the field of post-graduate education, this institute has played a very vital role since its inception in 1905. It was rightly conferred the status of a "Deemed-to be-University" in 1958 and so far it has produced more than 1462 M.Scs and 1674 Ph.Ds including more than 300 students from other developing countries. It can take pride in in the fact that many of its alumni are manning leadership positions in our national agricultural system, while several others are occupying positions of eminence in several of the International organisations and institutes. Thus, the role of this Institute in providing highly qualified manpower to Agricultural Universities and other sister institutes under the ICAR system has been highly praiseworthy. But, we have to take cognizance of the fact that in the field of higher agricultural education also the institute has to reassess the situation and redefine its role because Agricultural Universities have developed the facilities for post-graduate education in a variety of disciplines...

"Educational facility for new emerging areas is also relatively less developed in many of the State agricultural universities.

"The IARI on the other hand not only has unparalleled physical facilities and faculty resources but attracts students and faculty members from all parts of the country. The IARI should therefore, think of concentrating on building up schools of excellence in important selected areas, oriented to tackle new and more challenging tasks in both basic and applied fields of research and placing more emphasis on doctoral and post-doctoral programmes.

"I am confident that this great Institute would prove more than equal to the tasks which it is posed with and that its future would be even brighter than its past has been. However, as in every major endeavour in life we have to free our minds from the shackles of preconceived notions, ideas and values. As Dr Bruno Kreisky in his recent memorable address, when the prestigious Jawaharlal Nehru Award for International understanding for 1983 was conferred on him, stated that countries like India have to break new ground in all the major fields including agriculture. Fortunately, India has not only the will but also the necessary scientific capability to make this a reality. I, on my part, assure you that as Union Minister for Agriculture and Rural Development and the President of the Indian Council of Agricultural Research, shall always be open to any reasonable requests from this Institute for furthering its mandate and objectives. As our beloved Pandit Jawaharlal Nehru had observed "Everything can wait but not agriculture", since food is the most important need of mankind. We, therefore, have to find resources to invest in this vital sector." ☐

Advertisement No. B-58/85

INDIAN INSTITUTE OF TECHNOLOGY

BOMBAY, DELHI, KANPUR, KHARAGPUR AND MADRAS

JOINT ADMISSION TO 3-SEMESTER M.TECH PROGRAMMES JULY 1985

General

Applications are invited for admission to the 3-Semester MASTER OF TECHNOLOGY (M. TECH.) programme offered by the five Institutes as well as M.Arch, MCP and MRP programmes at IIT Kharagpur only.

Disciplines

Disciplines and areas of specialisations for the Master's programmes of the IITs are given in the Information Booklet that would be sent along with the application form.

Each of these programmes is sufficiently flexible and provides considerable choice of electives not only to give specialisations in selected fields but also to meet the diverse interests of engineers and scientists from different disciplines.

Minimum Qualifications for Admission

The candidates for admission to the courses mentioned above must have qualified at the Graduate Aptitude Test in Engineering (GATE) held on 26th February 1983, 3rd December 1983 or 2nd Feb., 1985 and must possess a Bachelor's degree in Engineering or equivalent or Master's degree in Science or Bachelor's degree in Architecture as stated in the Annexure to the GATE brochure-cum-information booklet. Candidates who have been successful in the GATE but whose results in the qualifying degree examination have yet to be declared are also eligible to apply provided they complete all requirements for the degree by August 1st 1985. They will be required to produce such a course completion certificate at the time of joining and their admission will be provisional subject to their passing in the qualifying examination. Based on the GATE score obtained the candidates will be considered for admission to one of the Institutes of their choice. These candidates would be sent choice sheets which are to be returned to the Institute of their first choice. Admission for each candidate will be considered strictly on the basis of merit and in the order of preference listed by him/her. Admissions are subject to the candidates being found medically fit.

Candidates holding Bachelor's degree in Naval Architecture, Regional Planning etc., who have been exempted from GATE, may also apply for admission to M.Tech. programmes to which they are eligible.

Reserved for Scheduled Castes/Scheduled Tribes

Certain percentage of seats are reserved for candidates belonging to the scheduled castes and scheduled tribes as per rules. However, to be considered for admission they should have qualified at the GATE held in February, December 1983 or February 1985.

Admission for Sponsored Candidates

Candidates sponsored by recognised Research and Development Institutions, Public Sector Undertakings etc.& fully financed by their employers will be considered for admission without qualifying at the GATE, provided they have secured in the qualifying examination an average percentage of marks not less than that specified by the Institute to which they apply. They are requested to contact the Institutes of their choice for application forms meant for sponsored candidates and mail back the completed applications to the same Institutes.

Scholarship

All candidates, including the sponsored candidates, who have been admitted to an M.Tech. programme through the GATE merit list are eligible to a scholarship of Rs. 1000/- per month for the entire duration of the programme. However, such sponsored candidates should produce from their employers a "No Objection Certificate" to receive the scholarship.

Information Booklet and Application Form

These can be obtained by sending :

(i) the application-cum-registration fee of Rs. 25/- by a CROSSED Bank Draft in favour of IIT———* payable at IIT ———*). (*Insert place of IIT to which you are making the request).

(ii) a requisition letter on A4 size paper (297×210 mm) giving the Bank Draft details and

(iii) a self-addressed stamped (Rs. 2.00) envelope of C5 size (229× 162mm) and superscribed "ADMISSION TO M.TECH." to any one of the following :

Chairman, M.Tech. Admissions
INDIAN INSTITUTE OF TECHNOLOGY
BOMBAY-400076, or DELHI-110016, or KANPUR-208016, or KHARAGPUR-721302, or MADRAS-600036.

APPLICATION FORMS WILL BE ISSUED FROM **15-4-1985**.

Last Dates

Supply of Application forms by post : **4th May 1985 (Saturday)**
Receipt of completed applications : **18th May 1985 (Saturday)**

AMERICAN STUDIES RESEARCH CENTRE

Hyderabad-500 007

Applications are invited for the position of

SENIOR FELLOW

(History/Social Sciences)

The ASRC is the largest library and centre in Asia for research on all topics relating to the United States. It serves scholars from India and South Asia writing post-graduate theses and mature works of scholarship. The Senior Fellows, of which there are normally two, are intimately involved in the academic administration of the Centre. They guide scholars, choose books for the collection, which now numbers 137,000 volumes, edit the **Indian Journal of American Studies** as well as symposia and commissioned works, participate in courses both in Hyderabad and around India, and represent the Centre at seminars and conferences.

QUALIFICATIONS :

The candidate for this position must be totally fluent in English and possess a Ph.D. either in some area of American Studies, or in a discipline requiring competence in American scholarship. Applications in history, political science, economics, sociology, public administration and law are encouraged. Applicants must be thoroughly familiar with America and American work in their fields. A minimum of 8 years teaching and research experience is essential for a Senior Fellow. However, applicants with 5 years teaching and research experience may also apply and be considered in the event of non-availability of a suitable candidate for the Senior level.

Candidates will be classified according to their credentials. The contract will be for three years, which may be extended to five years.

Pay Scales are: Senior Rs. 1500-60-1800-100-2000-125/2-2500
Junior Rs. 1200-50-1300-60-1900
Allowances admissible in the scales follow those of Central Universities.

Candidates called for interview will be paid first-class round-trip train fare and given local accommodation.

Applications on plain paper giving full particulars, through proper channels, and listing up to three referees should be sent before 30 April 1985 to :

The Director
American Studies Research Centre
Hyderabad-500 007

Seminar on Legal Research Methodology at Bombay University

The Department of Law, University of Bombay, conducted a Research Methodology Seminar on March 23, 1985 in which about 35 research scholars participated. The Seminar was inaugurated by Dr Fabian Fernandes and the key-note was presented by Dr. B.D. Ghonasgi, Professor of Business Finance and Head, University Department of Commerce. Dr. Ghonasgi elucidated the import of research and stated that research has widest possible connotation to cover all types of objective research in different disciplines. He implored that not much research work has been done in Social Sciences including Law as compared to pure Science. He underlined the importance of fundamental research and elucidated the philosophy of Law. The researcher must evaluate the Law by examining the application of Law through surveys. In the process he must identify the gaps between Law and Practice. He further pointed out that concept of research has got to be dynamic and inter-disciplinary approach should be adopted so that Law is not isolated from the field of its application. The subject of Research Methodology cannot have any rigid formula as the tools and the techniques vary in terms of area and the subject. He was of the view that we must evolve and develop all the faculties including Law to attain a level of excellence in the field of legal diplomacy which India has yet to develop to the extent of establishing our superiority.

Dr. Fernandes exhorted the research scholars to accelerate the pace of research and follow the guidelines suggested by the Chief Guest. The first Working Session was chaired by Professor S.L. Khot at the second Working Session by Professor P. Shankaranarayanan. Guest speakers included Principal D.N. Sandanshiv and Principal P.V. Mehta and Dr. T. Lokhande. Speaker after speaker emphasised upon the need to have methodology to regulate the research and to relate it to social attitudes, concepts and values, and as far as possible to adopt inter-disciplinary approach. There is a need to evolve Indian jurisprudence against the background of Directive Principles of State Policy and the cases of Public Interest Litigation. Every research work should make some original contribution to the philosophy of Law and it should be forerunner of legislation.

Syed Hashim Ali takes over as VC, AMU

Mr Syed Hashim Ali has taken over as Vice-Chancellor of Aligarh Muslim University on April 8, 1985. Earlier Mr. Hashim Ali has been working as Vice-Chancellor of the Osmania University since December, 1982. As a member of the Indian Administrative Service, he has held several important positions in the Government of Andhra Pradesh.

Mr. Syed Hashim Ali

He was Chairman, Commission for Irrigation Utilization, in which capacity, he brought out a two-volume report on problems of Irrigation Utilization and Command Area Development.

As Agricultural Production Commissioner and Principal Secretary of the Government of Andhra Pradesh, he coordinated the work of the Secretaries and Heads of Departments dealing with Agricultural Production, i.e. Irrigation, Command Area Development, Agriculture, Rural Development, Co-operation, Marketing, Animal Husbandry, Fisheries, Area Development Programmes (SFDA), DPAP, Coordinated Plan schemes etc.

Syed Hashim Ali was the Secretary and Commissioner, Command Area Development and Irrigation Utilization for nearly nine years. He dealt with all problems connected with Command Area Development in respect of all major, medium and minor projects in the State. His work in this field was considered a pioneering effort and was recognised by the World Bank, Food and Agricultural Organization (FAO), Rome and the Ford Foundation and he has also worked as a consultant for these organizations. Mr. Ali published several papers on Irrigation Utilization and CAD in National and International Journals. His two books on Command Area Development and Irrigation Utilization are being finalised.

Mr. Hashim Ali is also a member of the Court of Governors, Administrative Staff College of India, Member of JNU Court, Director, Praga Tools, Vice-Chairman, Idara-e-Adbiyat Urdu, Hyderabad.

He is also member of several literary and cultural organizations and is an essayist in Urdu. □

Silver Jubilee Celebrations of Roorkee Varsity

As a part of its Silver Jubilee Year Celebrations, the Department of Mathematics, organised a Workshop on 'Solid Mechanics' from March 13-16, 1985. The chief aim of the Workshop was to bring together applied mathematicians and practical workers working in the field of Solid Mechanics and discuss across the table the problems facing the theoreticians and working engineers.

The Workshop was inaugurated by Dr. Jagjit Singh, a mathematician turned administrator.

Engineers and scientists from various universities, IIT's, and research organisations such as Reactor Research Centre, Kalpakkam attended the workshop. Invited talks by learned speakers were delivered and discussed. Research papers were also presented in the scientific sessions.

The workshop succeeded in identifying the problems currently being faced in the design of structures and sophisticated machine parts, such as nuclear reactor tubes and generator turbines, requiring low tolerances and precise designs and their possible solutions.

The Chemistry Department organized a symposium on 'Recent Trends in Instrumental Methods of Analysis' from Feb. 23-25, 1985 to celebrate its silver jubilee. The symposium was attended by participants from Bhabha Atomic Research Centre, Geological Survey of India, CSIR and Defence Laboratories, industries and teaching institutions. In the symposium sixteen invited lectures were delivered and twenty-two papers were presented highlighting the present state of art of the subject.

The symposium was inaugurated by Professor Bhagat Singh who in his address traced the chronological development and the importance of chemical science. The keynote address was delivered by Prof. R.C. Kapoor, Head, Chemistry Department, University of Jodhpur, Jodhpur who highlighted some of the very recent developments in the area. Dr. K.S.V. Santhanam, Tata Institute of Fundamental Research, Bombay delivered lectures on 'Chemistry Deptt' on Feb. 19, 1985.

National seminar on Hindi teaching and methodology

A six-day national seminar sponsored by the U.G.C. and organised at Marwari College, Bhagalpur, was inaugurated by Dr. Nasver Singh, Director, Indian Language Centre, J.N.U., New Delhi.

In this seminar, scholars from different Universities of the country read their papers and delivered Lectures. Delegates from different Colleges of the University engaged themselves in dialogues and discussions.

Welcoming the guests and the delegates, Dr. Bechen, Principal and Director of the National seminar, stressed upon the necessity not of any standard methodology of teaching but of a continuous dialogue between the teacher-delegates and the guest speakers which may prove to be innovative and fruitful as an aid to teaching.

Dr. Singh, in his speech, made it clear that he did not favour a codified and standardised, teaching-methodology. A swimmer learns swimming from his own efforts. The same is true of teaching. In order to make teaching more and more beneficial to the students, he stressed upon the importance of the teachers own inclination and intellectual acumen. He also asked the teachers to use simple language in order to make themselves more clear to students. This requires a liberal use of words without any distinction between Hindi and Urdu words.

Dr. M. Q. Towheed, Vice-Chancellor of Bhagalpur University, was the chief guest.

Several papers on different forms of Hindi literature like Linguistics History of Hindi Literature, Novel, Short Story, Poetry, Drama, Essay etc. were read by several invited guest speakers in this seminar.

Concluding the seminar, Dr. Vijoy Pal Singh, Retired Head of the Dept. of Hindi, B.H.U., stressed upon the importance of Hindi and explained the necessity of its being spread throughout the country. Earlier, Convenor of the seminar, Dr. B.N. Agrawal presented his report. Dr. Rajendra Panjyar submitted a summary of the discussions held during the six days of the Seminar.

JNU to get one crore rupees for campus development

The University Grants Commission has released a total 'on-account grant of Rs. 99 lakhs for the campus development work in Jawaharlal Nehru University.

Of this, a sum of Rs. 60 lakhs will be spent on construction of a building for the School of International Studies. The proposed five-storey building will accommodate nine Centres of the School besides the offices of the Faculty, Dean and the General Administration. The School building will have a Committee Room, 13 lecture/tutorial rooms and one large Lecture Hall for 100 students. It will also have publication room, reprography room, project rooms and other ancilliary facilities.

UGC has also approved the construction of a Faculty Club and a Guest House for the University. This complex will have 8 double rooms and 8 single rooms with attached bathrooms, a lounge, a small dinning hall, games room, table-tennis-room and TV room.

A Community Centre and Club for Karamcharis will also be constructed at a cost of Rs. 15

lakhs. It will have facilities for indoor games and other facilities.

An additional overhead water tank with a storage capacity of 1.5 lakh gallons of water will also be constructed at a cost of over Rs. 17 lakhs to meet the increasing demand of water due to addition of more hostels and residences.

The work has been entrusted to CPWD and efforts are being made to complete the work by 1989, the birth centenary of Jawaharlal Nehru.

New courses to be introduced in MU

The Academic Council of Manipur University at its meeting held in January 1985 decided that the M.Phil courses in Life Sciences, English Language and Economics would be started in Manipur University from the 1985-86 session. There are already M. Phil programmes in Manipuri Language & Literature, Political Science and History. The minimum qualification for admission to M. Phil courses for all disciplines will be 50% marks in M.A./M. Com./ M.Sc.

In order to improve the quality of research at the University, it has been decided to introduce pre-Ph.D. courses for students who are interested to register direct for Ph.D. programme without completing the M.Phil degree. The pre-Ph.D. course will be for one year. It will consist of 3 papers of 100 marks each and one dissertation carrying 100 marks. One of the courses will be Methodology of Research and the other two will be of Inter-disciplinary nature. The Academic Council also decided to allow undergraduate students to register themselves with the University as private candidates for undergraduate examinations in Arts & Commerce in case they fulfil the minimum desired quafications.

Other decisions taken by the Academic Council include the introduction of correspondence courses in Manipur University as early as possible and recommendation of inclusion of a University representative in the selection Committee of the Manipur Government for the Selection of teachers for the affiliated colleges including the Government colleges.

Patna University to restrict admissions

The Patna University, it is reported, is contemplating to restrict admission of students into the Intermediate and Bachelor classes of the Institute of Correspondence Courses. This issue is likely to go before the Academic Council of the University for its consideration. Admission into the Institute of Correspondence Courses is likely to be restricted to those in service.

Also, the duration of the course for those enrolled for Intermediate is likely to be made three years and four years for those enrolled in Bachelor's courses.

Further, the facility of correspondence course for students attending regular classes in the Patna College and in the Vanijya Mahavidyalaya is likely to be withdrawn.

MANIFEST-85 at MDU

Business Management Department of Maharshi Dayanand University organised two-day Manifest-85 on February 26 & 27, 1985 to which management students from all over India were invited. Over 50 students from different institutes and universities participated in this festival. Manifest-85 included competitions such as debate, extempore, class discussion, mime, songs and sports such as Badminton, Table Tennis, and Chess etc. Mr. Lalit Jain, Technical Director, Laxmi Precision Screws, Rohtak inaugurated the function. The prizes were distributed by Professor Raj Tahlan, Visiting Professor to the Deptt. and Director, Canadian

Book Festival at Allahabad

The National Book Trust organised a Book Festival in Allahabad in collaboration with the Jawaharlal Nehru Memorial Fund at Swaraj Bhawan from March 22 to 29, 1985, where AIU also displayed its publications. The Festival was inaugurated by Dr. R.P. Misra, Vice-Chancellor, Allahabad University, who visited AIU stall and appreciated AIU endeavours in displaying publications in the Book Festival, which were well received by the citizens of Allahabad.

ASSOCIATION OF INDIAN UNIVERSITIES NEW DELHI

Dr. R.P. Misra (Right), VC, Allahabad, visited AIU stall at the Book Festival which he inaugurated recently at Allahabad.

Institute of Business Management, Ontario. Manifest-85 was sponsored by M/s Hilton Rubber Ltd., Sonepat (Haryana).

Pharmacy Department of Annamalai Varsity upgraded

The Pharmacy Council of India has recognised the Pharmacy Department of the Annamalai University as an approved centre for imparting instruction in pharmaceutical science. The Department has also been upgraded as the Institute of Pharmaceutical Technology as per the norms fixed by the Central Government of India. It has envisaged a 2-crore budget for constructing separate buildings and purchasing equipments, journals etc.

Orientation programme on computer in examination at Jammu Varsity

The Examination Reform Unit of the University of Jammu organised a one-day orientation programme on "Computer in Examination" on 16th March, 1985. Prof. V. Natarajan Project Director (Exams.) of the Association of Indian Universities was the Chief Resource person. The Programme focussed on the use of Computer at pre-conduct, conduct and post-conduct stages of examination. It also concentrated on the use of computer for data processing and analysis. The course is meant for Deans of Faculties, Heads of the Teaching Departments of the University, Principals of the academic colleges and Officers of the University. Prof. M.R. Puri inaugurated the programme

Manipur varsity to switch over to 10+2+3

The U.G.C. pattern of 3-year degree course will be adopted by the Manipur University to re-organise the courses at plus 3 stage. For this, 25% marks will be reserved for foundation course in the 3-year degree course. The decision was taken by the Academic Council and the Syndicate of the Manipur University at their meetings held on January 25 and 30, 1985 respectively.

Seminar-cum-Workshop on 'Hindi in Banks' at DBHPS

The Post graduate & Research Complex of Dakshina Bharat Hindi Prachar Sabha, Khairatabad, Hyderabad organised a four-day Seminar-cum-Workshop on the topic 'Hindi in Banks' from 13 to 16 March, 1985.

In his inaugural address, Dr. S.K. Verma, Director, Central Institute of English and Foreign Languages, emphasised the use and utility of Functional Hindi on higher level of Hindi teaching. He praised the Institute for organising this type of programme which gives a new utilitybased outlook to Hindi and its registeral varieties.

In his introductory lecture, Sri V. Anjaneya Sarma Registrar, P.G. Complex gave a brief description of the complex and its courses related to Func-

CALENDAR OF EVENTS

Proposed Dates of the Event	Title	Objective	Name of the Organising Department	Name of the Organising Secretary/Officer to be contacted
November, 28-29 1985	**International Conference on New Technologies in Higher Education**	**To assess the possibilities of the now available new technologies in the background of the broad social and cultural context and the state and Trends of Higher Education in India and other developing countries**	**Association of Indian Universities, IIT/ Delhi, JNU, Jamia Millia and University of Delhi**	**Prof. Tapas Mazumdar (JNU) Prof. S. Shukla (Jamia Millia) Prof. L.R. Shah (JNU)**
July 8-19, 1985	Short term intensive training programme on Abstracting & Indexing	To cover all basic principles, developments and perspectives in abstracting and indexing traditions to computerised retrieval systems	National Institute of Small Industry Extension Training, Yousufguda, Hyderabad	Mrs. K. Subhashini, Course Director
December 12-14, 1985	Asia Pacific Symposium on Wind Engineering	Nature of wind and effect on structures and study of damage and its socio economic implications	Civil Engg. Department, University of Roorkee, Roorkee	Dr. S. K. Pathak, Organising Secretary
December 16-18, 1985	Indian Geotechnical Conference	To advance the state of knowledge about the geotechnical engineering and to give definite direction to the future research work	Earthquake Engg. Department, University of Roorkee, Roorkee	Dr. V. H. Joshi, Organising Secretary

tional Hindi at Postgraduate level.

Six papers on various topics i.e. 'Concept of Register, language development and Hindi in Banks', 'Use of Hindi in Banks', 'Use of Hindi in specialised Banks', 'Functional Hindi and its teaching', 'Banking Mass media and Hindi' and 'Banking Hindi Syntax' were presented in the Seminar.

The three-day workshop was related to vocabulary of Banks in Hindi. On the first day, one thousand words were listed from Bank Vocabulary and common-core was investigated with various glossaries prepared by various banks. On the second day non-grammatical sentences, Literal translations of English sentences were described from 200 sentences selected from Banking documents and their thorough analysis was done. On the third day advertising material in Hindi was analysed on the basis of stylistic analysis theories.

University of Jammu project on Roodad-i-Iqbal

Professor Jagan Nath Azad, who was awarded Emeritus Fellowship in the Department of Urdu, University of Jammu in January 1984, has completed the first volume of his project entitled "Roodad-i-Iqbal" and submitted it to the Vice-Chancellor.

The first volume of the project, Allama Iqbal's biography, spreading over nearly 700 hand-written full-scape pages covers Iqbal's life story up to 1905 and contains 10 chapters.

According to the author, Professor Jagan Nath Azad, the second volume, on which he has already started working, would deal with Iqbal's stay on the continent from 1905 to 1908.

It is hoped that this biography of Allama Iqbal, which Professor Azad has undertaken as a project in his capacity as Fellow Emeritus in the University of Jammu, is going to be a biography containing the minutest details of the poet's life touching on not only the events of his life but also the development of his thought leading to the creation of his magnificent poetic art.

News from Agril. Varsities

Efficient farm machines needed

Dr. S.R. Verma, Dean of the College of Agricultural Engineering, Punjab Agricultural University, said that farm technology was going to be crucial in increasing the agricultural production to meet the demand of the rising population of the country. He told that the present agricultural production was around 151 million tonnes while the requirement of the population by the year 2001 was estimated to be 250 million tonnes. The difference of 100 million tonnes of food-grains could be made-up only by enhancing the productivity per unit area by using efficient machines for performing farm operations timely, judicious use of farm inputs like seeds, fertilizer, insecticides and by handling the produce after harvesting properly. Dr. Verma emphasised the vital role of farm machinery manufacturers in producing appropriate machines developed by the research engineers and marketing them at an appropriate price to the farmers. Dr. Verma said that there was a need of objective and concerted research efforts for developing suitable farm technology for the Indian farmers.

Dr. Verma was inaugurating a two-day meeting of the Co-ordination Committee of All-India Co-ordinated Research Scheme for Research and Development of Farm Implements and Machinery and Production of Prototypes and their Evaluation under different agro-climatic conditions, at Ludhiana on April 5, 1985. The meeting which was sponsored by the Indian Council of Agricultural Research was attended by 20 delegates from different agricultural universities, ICAR Institutions throughout the country, besides leading farm machinery manufacturers from Punjab.

Dr. Anwar Alam, Assistant Director-General (Engg) of ICAR inaugurated an exhibition of reapers and their components. He was told that about 14 manufacturers were manufacturing the PAU-designed reaper and that production during the current year was expected to be 3,000 machines.

Dr. R.S. Devnani, Project Co-ordinator of the Co-ordination Committee of ICAR said that about 100 implements had been released for production at different centres under this scheme. He told that during the Seventh Five-Year Plan a total of 27 centres would be set-up throughout the country for developing appropriate farm machinery technology.

Dr. L.N. Shukla, Head of the Department of Farm Power & Machinery while welcoming the delegates said that the most important contribution of his department was the development and introduction of a tractor-drawn vertical conveying reaper. He told that this machine could harvest about eight acres of wheat per day and saved 3-4 man-days per acre harvested while the farmers saved about Rs. 100 per acre. He said that this machine was suitable for harvesting both wheat and paddy. Dr. Shukla said that beside the development of the reaper, his department was working on other machines like engine-operated paddy transplanters, manual weeders and multi-crop threshers.

PAU organises solar cooker training for ladies

The Training Unit of the College of Agricultural Engineering and the Department of

Mechanical Engineering organized a one-day training course in operation and maintenance of solar cookers on April 2, 1985. More than 50 ladies participated in the course.

Dr. Sukhdev Singh, Vice-Chancellor of the University said that in view of the present shortage of conventional fuels it had become necessary to harness solar energy for cooking. He urged the ladies to make maximum use of the solar cookers and give their suggestions so that the solar cookers could be further improved. The Vice-Chancellor told that to popularise the solar cookers, the Union Government was giving a subsidy of Rs. 150 for each solar cooker. He called upon the manufacturers to provide a comprehensive Instruction Manual on the working of the cooker to their customers in easy to understand language.

Dr. K.D. Mannan, Head of the Department of Mechanical Engineering said that by using a solar cooker, 30-40 per cent of the conventional fuel can be saved.

Pantnagar Varsity programme to combat mango shoot gall

The Pantnagar University has embarked upon a phased programme of combating mango shoot gall in the U.P. Tarai, where this insect causing mango malady has appeared this year in an epidemic form.

To start with, one day training programme will be organised in the potential mango growing areas to train farmers and orchardists in the identification of the affected plants as also with the different developmental stages of the pest besides proper application techniques to help them in acheiving a better and economical check up of the disorder. It has also been proposed to lay necessary demonstrations at few locations in the severely affected orchards in the month of August-September.

The psyllid insect, responsible for causing green cone-shaped galls on mango shoots, has only one genaration in a year. Eggs are laid inside the midrib of new tender leaves in March-April and feeding starts after mid-August at the ovipositional sites in the embryonic stage without proper egg hatch—a most peculiar thing in the life history of the insect. While feeding here, insects release toxins which force axillary and apical buds to convert into galls.

The physiology and bio-chemistry of gall formation, which is under experimentation, will help in finding out a permanent and cheaper control methods of gall formation and may substitute chemical control in future. Presently 0.04% nonocrotophes or 0.03% dimetheate is thoroughly sprayed thrice at 12-15 days interval starting from August 15.

It will be difficult at this moment to state the causes of the outbreak this year in Tarai. Whether the insect has aquired resistance to the recommended chemicals or it is due to the faulty application techniques or the insecticides were spurious will be investigated by university in the coming few months.

PAU imparts training on bio-fertilisers

The Department of Extension Education of the Punjab Agricultural University, in collaboration with the Departments of Plant Breeding and Microbiology, organised a three-day training course for farmers on the use of bio-fertilisers (Rhizobium culture).

During the training, lectures-cum-discussions on various subjects such as role and benefits of Rhizobium inoculation, effect of agronomic practices on the management of Rhizobium inoculation, importance and selection of efficient strains of Rhizobium in different pulse crops were arranged. Lectures were also held on improved varieties of pulse crops and control of their diseases and insect-pests. Practicals were conducted on the inoculation technique of Rhizobium in pulse crops. Films on the use of Rhizobium culture in pulse crops were also screened. Participants showed keen interest in the purchase of farm literature produced by the PAU.

Dr. K.S. Nandpuri, Director of Extension Education, who presided over the concluding session impressed upon the participants to sow pulse crops with the Rhizobium inoculation and also to actively participate in farmers training and educational programmes being organised by the University.

We Congratulate . . .

(1) Dr. S.S. Bal who has been appointed Vice-Chancellor of the Guru Nanak Dev University, Amritsar.

(2) Shri K. Ramamurthy who has been appointed Vice-Chancellor of the Orissa University of Agriculture & Technology, Bhubaneswar.

News from Abroad

Brisbane to host Parasitology Congress

The Sixth International Parasitology Congress with the theme 'Towards the Future' will be held at the University of Queensland from April 24-30.

About 1000 delegates from 22 countries, including India and the Philippines, are expected to attend the one-week program which is held every four years as a forum for discussion of problems and developments in parasitology.

The Brisbane convention would cover: molecules, cells and parasites; parasites and human health, the parasite assemblage; parasitism in aquatic environments; productivity; and animal health. [Courtesy : Australian Information Service Newsletter]

United States Educational Foundation in India

"Fulbright House", 12 Hailey Road, New Delhi-110 001

Invites applications for the following scholarships/fellowships for the 1986-87 academic year :

1. U.S. Government post-doctoral fellowships for independent research (duration 4-6 months). Scholars in colleges, universities and research institutions with Ph.D. or equivalent published work, below 45 years, are eligible for fellowships. Available fields: American Studies, Social Sciences, Humanities, Business Administration, Computer Science, Molecular Biology, Photo Biology, Environmental Biology. Only those who are teaching courses on America are eligible to apply for fellowships in American Studies. Last date: July 15, 1985.
2. Readers and Professors below the age of 55 may apply for short-term (3 months) fellowships. Fields (i) Computer Science, (ii) Library Science, and (iii) Education with special reference to Distance Education. Last date: July 15, 1985.
3. Hubert H. Humphrey Fellowships for academic study and practical training for nine months, for managers and administrators at decision making levels in fields like Agriculture, Planning, Resource Management, Public Health and Public Administration. (Preferably first class both at bachelor's and master's level, age below 35). Last date: June 15, 1985.
4. U.S. Government post-doctoral travel-only grants for those who have a teaching/research appointment in a U.S. university for a minimum period of 3 months, with assured support of at least $1,000 per month can apply. Last date: June 1, 1985.
5. East-West Center, Hawaii, predoctoral scholarships. Permanently employed persons (preferably below 35), with two years of experience in the field of specialization with 55% marks in B.A. and 60% in M.A. eligible. Available fields: Agricultural Economics, Agronomy & Soil Science; American Studies; Anthropology; Biochemistry; Biostatistics-Epidemiology; Botanical Sciences; Chemistry; Drama and Theatre; Economics; Educational Psychology; Electrical Engineering; Entomology; Geography; Geology and Geophysics; History; Horticulture; Linguistics; Meteorology; Microbiology; Ocean Engineering; Oceanography; Philosophy; Political Science, Psychology; Public Health; Sociology, Zoology. Last date: June 14, 1985.
6. Internships in Communication Technology for a non-degree program up to 6 months. Faculty members teaching courses in Audio-visual communication in Indian universities and persons employed in television (software and production), below 40 years of age are eligible. Last date: August 10, 1985.
7. Council of International Programs for Youth Leaders and Social Workers. (Duration 4 to 13 months). Full-time social workers with a Master's degree in Social Work (preferably below 42), with at least two years full-time paid work in the areas of (a) alcoholism, (b) community centres, (c) drug abuse, (d) emotionally disturbed children, (e) family planning, (f) juvenile delinquency, (g) mental retardation, (h) physically handicapped, (i) ageing (j) professional youth workers, and (k) health care will be eligible to apply in the program. In 1986 preference will be given to the areas of (i) Ageing, (ii) Medical Socal Work, and (iii) Health Related Services (Public Health), Community Health). Last date: August 10, 1985.
8. East-West Center postdoctoral fellowships for Asian/Pacific Area Studies (including American Studies). Those who have received a doctoral degree after September 1983 and need assistance to revise or update their thesis are eligible. Last date: October 15, 1985.

Only persons holding permanent positions are eligible to apply. For details and preliminary application forms, please write to the relevant office of USEFI, giving details of age, class and percentage of marks of all university examinations taken and present position with a stamped (1 Re) self-addressed envelope, size 23 cm x 10 cm.

1. U.S. Educational Foundation in India
   "Sundeep", 4 New Marine Lines
   Bombay-400 020
2. U.S. Educational Foundation in India
   8 Short Street
   Calcutta-700 017
3. U.S. Educational Foundation in India
   12 Hailey Road
   New Delhi-110 001
4. U.S. Educational Foundation in India
   American Consulate Building
   Mount Road
   Madras-600 006

AIU Library & Documentation Services

One of the important functions of the Association of Indian Universities is to act as a clearing house of information on higher education in the country. Towards this end the AIU Library is engaged in collection building and developing instruments for the dissemination of research information. Over the years a valuable collection of books and documents on different aspects of higher education has been acquired.

The Library has also developed Bibliography of Doctoral Dissertations as an effective tool in the dissemination of research information. Retrospective bibliographies covering the period 1857-1970 and 1970-75 were the first to appear. Effective 1975, however, the bibliography is issued annually in two volumes. One volume deals with Natural and Applied Sciences while the other records doctoral degrees awarded in Social Sciences and the Humanities. In addition to the normal bibliographical details like the name of the Research Scholar, the title of the thesis, years of registration for and award of the degree, and the name of the University accepting the thesis for award of a doctoral degree, the bibliography also gives name and complete address of the supervising teacher and an availability note that seeks to inform whether a copy of the dissertation is available for consultation and use in the University Library/Department or Registrar's Office.

The columns 'Theses of the Month' and 'Research in Progress' are intended to cut out the time lag between the receipt of information and its inclusion in bibliography. Such Universities as are not sending us regular information in respect of Doctoral Theses accepted and research scholars enrolled are welcome to make use of these columns.

The Library is situated at 17-B, Indraprastha Marg, New Delhi-110002. It is open from 10 a.m. to 5 p.m. Monday through Saturday except Second Saturday.

RESEARCH IN PROGRESS

A list of Research Scholars Registered for Doctoral Degrees of Indian Universities

PHYSICAL SCIENCES

Physics

1. Bhosale, C.H. *Studies on ternary chalcogenide based heterojunction solar cells.* Shivaji U, Kolhapur. Dr. S.H. Papar.

2. Brahame, Gajanan. *Luminescence of mixed alkaline earth silicates.* HS Gour, Sagar. Dr. S. Sivaraman and Dr. R.A. Singh.

3. Dubey, Niraj. *Thermostimulated discharge current and spontaneous current emission studies of polymeric thin film composites.* HS Gour, Sagar. Prof. A.P. Shrivastava.

4. Jain, Indivar Kumar. *Study of persistent internal polarisation state in polymers and co-polymers.* HS Gour, Sagar. Dr. R. Nath.

5. Jain, Pannalal. *Field aligned currents and acceleration of charged particles.* HS Gour, Sagar. Dr. M.S. Tiwari.

6. Pathak, Mamta. *Vibrational spectra of some organic molecules.* HS Gour, Sagar. Dr. R.A. Singh.

7. Pramod, D. *Gyro-wave interaction in ionosphere.* U Delhi. Prof. C.S.G.K. Setty and Dr. N. Nath.

8. Sehgal, Anand Kumar. *Luminescence of strontium silicate phosphors.* HS Gour, Sagar. Dr. R.K. Pandey.

9. Sharma, Kailash Chandra. *Luminescence of Cao: Sro phosphors.* HS Gour, Sagar. Dr. P.S. Diwan.

10. Sharma, Rishi Kumar. *Mossbauer electrical and magnetic properties of ferrites.* U Delhi. Prof. J.S. Baijal.

11. Suri, Devendra Kumar. *X-ray and related studies in the system Cu (GaIn) Se.* U Delhi. Dr. G.K. Chadha and Dr. K.C. Nagpal.

12. Verma, Ashish. *Application of thermoluminescence in forensic investigation.* HS Gour, Sagar. Dr. S. Sivaraman and Dr. R.K. Pandey.

Chemistry

1. Adeyemi, Olufemi Olalekan. *Corrosion inhibition by organic inhibitors.* U Delhi. Prof. N.K. Ray and Dr. Gurmeet Singh.

2. Ambuj Kumar. *Chemistry of eutectics and charge transfer complexes.* BHU, Varanasi. Dr. U.S. Rai.

3. Babukutty, Y. *Microanalytical techniques.* BHU, Varanasi. Dr. A.K. Ghose.

4. Bruno, L. *Synthesis of new heterocycles and evaluation of their pharmacological properties.* U Ker, Trivandrum. Dr. C.P. Joshua.

5. Genda. *Magnetic and spectral studies of transition metal complexes of biologically active ligands.* BHU, Varanasi. Dr. T.R. Rao.

6. Hashim Nizar, P.N. *Studies in potential anticancer agents.* U Delhi. Dr. S.M.S. Chauhan.

7. Jain Archana. *Studies in heterocycles.* BHU, Varanasi. Dr. A.K. Mukherjee.

8. Kohli, Tejinder Singh. *Synthetic and photochemical studies of nitrogen heterocycles.* U Delhi. Dr. S.M.S. Chauhan.

9. Pandey, Anirudh Kumar. *Electrochemistry: Corrosion of some alloys in acidic media.* BHU, Varanasi. Dr. V.B. Singh.

10. Prasad, Brijmohan. *Studies on the reductive coupling at cathodes and its use in organic synthesis.* BHU, Varanasi. Dr. R.A. Mishra.

11. Prasad, Shyam Raj. *Stereochemical assignments through NMR spectroscopy.* BHU, Varanasi. Prof. S.M. Verma.

12. Ratna, Rajan Sudesh. *Nuclear chemistry isotope exchange.* BHU, Varanasi. Dr. R. Tripathi.

13. Sarita. *NMR spectral studies of heterocyclics.* MDU, Rohtak. Dr. S.M. Mukherji.

14. Sastry, Mandalika Subbaraya. *Partition equilibria in analytical chemistry.* BHU, Varanasi. Dr. A.K. Ghose.

15. Sharma, Usha. *Studies on transition metal complexes of oxygen, nitrogen and sulphur donors.* BHU, Varanasi. Dr. N.K. Singh.

16. Singh, Krishna Nand. *Anodic synthesis of some biologically important organic compounds.* BHU, Varanasi. Dr. R.A. Mishra.

17. Singh, Manorama. *Electrochemical synthesis of organic compounds.* BHU, Varanasi. Dr. R.A. Mishra.

18. Singh, Pramod Kumar. *Studies on lanthanide complexes of some N.O. donor ligands.* BHU, Varanasi. Dr. Bachcha Singh.

19. Singh, Santosh Kumar. *Natural products : Chemical investigation of medicinal plants.* BHU, Varanasi. Dr. Vyasji Tripathi.

20. Singh, Vinod Kumar. *Coordination chemistry: Bivalent transition metal complexes of NNO and NNS ligands.* BHU, Varanasi. Dr. K.K. Narang.

21. Sujatha, S. *Separation of some fission products.* BHU, Varanasi. Dr. Rajendra Narain Singh.

22. Tripathi, Rajesh. *Transition metal complexes of oxygen, nitrogen and sulphur ligands.* BHU, Varanasi. Dr. N.K. Singh.

23. Verma, Himanshu Bhushan. *Synthetic studies on some sulphur compounds.* BHU, Varanasi. Prof. P.K. Srivastava.

24. Visweswara Rao, Koppaka. *Chemical studies of synthetic porphyrins.* U Delhi. Dr. S.M.S. Chauhan.

Engineering & Technology

1. Gupta, Kuldip Kumar. *Stability of slopes in open-cast mines.* BHU, Varanasi. Prof. D.P. Singh.

BIOLOGICAL SCIENCES

Biochemistry

1. Dwivedi, Padmapati. *Stress metabolism in rice.* BHU, Varanasi. Dr. R.S. Dubey.

Zoology

1. Ananda Rao, Molleti. *Nutrition hormones and reproduction.* U Delhi. Dr. R.N. Saxena.

2. Angra, Rajni. *Histophysiological study of muscle.* U Delhi. Prof. C.L. Talesara.

Medical Sciences

1. Joshi, Karuna. *Evaluation of the concept of Tridosha Theory in Ancient India.* BHU, Varanasi. Prof. L.M. Singh.

2. Raghunandanan, V. *Role of suprachiasmatic nuclei and amygdala on the circadian rhythm of food intake.* MDU, Rohtak. Dr. (Mrs.) B.K. Maini.

3. Sikka, Rama. *Heavy metal ion resistance in Kle-briella Pneumoniae.* MDU, Rohtak. Dr. Uma Sabharwal and Dr. D.R. Arora.

THESES OF THE MONTH

A list of Doctoral Theses Accepted by Indian Universities

PHYSICAL SCIENCES

Mathematics

1. Akilandam, S. *Studies in lattice theory with special reference to semi-super-modular lattices, splitting lattices and modular lattices with four generators.* U Madras.

2. Anand Babu, L. *The resolution of potential fields using integral transform.* OU, Hyderabad.

3. Chandra, Avijit. *Problems on seismic wave propagation in various types of layer.* ISM, Dhanbad.

4. Chandrasekaran, Evelyn. *Some theoretical investigations on fluid flows with and without participate suspensions.* Anna U, Guindy.

5. Chattopadhyay, Kalyani. *Study on region of free turbulence vis-a-vis that of turbulent boundary layer.* U Calcutta.

6. Harit, Sudhanshu. *Transform methods and their applications to the study of special functions of one and more variables.* U Raj, Jaipur.

7. Hazarika, Gopal Ch. *Computer oriented numerical methods for the solutions of certain problems in fluid mechanics.* Dibrugarh U.

8. Malashetty, M.S. *Linear and nonlinear convection in a porous medium.* Bangalore U.

9. Mittal, Shanti Swarup. *Study of generalized, functions, integral transforms and their applications.* U Raj, Jaipur.

10. Narvilkar, Dilip K. *Solution of hydrodynamical models in internal ballistics of guns.* U Poona.

11. Pal, AshisKumar. *Some problems on elastic waves in layered media* ISM, Dhanbad.

12. Prasad, Bhikhari. *A study of special types of topological vector spaces.* Mag U, Bodh Gaya.

13. Rajendran, P. Alphonse. *Localization of T-rings.* U Madras.

14. Saxena, R.M. *The effects of rotation and tidal distortions on the structure and periods of small oscillations of gaseous spheres.* U Roorkee.

15. Singaravadivelu, M. *Quaternionic determinants and solutions to some problems of F.J. Dyson.* U Madras.

16. Singh, Gaj Raj. *Numerical solution of some problems on the structure of rotating polytropes.* U Roorkee.

17. Srinivasa, B.R. *Stability and singularity in general theory of relativity.* Bangalore U.

18. Subramanyam, Naidu Rayapati. *Cost-benefit analysis of systems subject to inspection and repair.* IIT, Bombay.

19. Surma Devi, C.D. *Unsteady laminar boundary layer flows.* Bangalore U.

20. Thrivikraman, Lalitha. *Some transient flows in magnetohydrodynamics.* U Madras.

21. Venkateswarlu, Pulakanam. *Reliability physics models.* IIT, Bombay.

Astronomy

1. Jagdev Singh. *Studies of solar atmosphere.* Pbi U, Patiala.

Statistics

1. Borah, Munindra. *A study of certain discrete probability distributions.* Gauhati U.

2. Khandelwal, Suresh Kumar. *Inferences based on conditional specification in multifactor experiments.* U Raj, Jaipur.

3. Rami Reddy, C. Subba. *Productivity and technological change in Indian industries.* SVU, Tirupati.

4. Sampatkumar, V.S. *Some studies in continuous sampling plans for markovian production process.* U Poona.

5. Singh, Housila Prasad. *Use of auxiliary information in estimation procedures for some population parameters.* ISM, Dhanbad.

6. Tiwari, Sadhana. *Some aspects of the multivariate distribution theory.* Pb U, Chandigarh.

Physics

1. Anantharamaiah, K.R. *A study of radio recombination lines from the galactic plane at 325 MHz.* Bangalore U.

2. Arora, Akhilesh Kumar. *Rayleigh scattering from defects in insulating crystals.* U Madras.

3. Aruna, S. *Vibrational spectra and molecular orbital studies of some organic compounds.* U Madras.

4. Ashok Kumar. *Studies of the electronic and dielectric properties of polymers with special reference to cellulose acetate.* U Roorkee.

5. Barkakati, Dipak Kumar. *A study of a quark model with charm and colour for exclusive processes.* Gauhati U.

6. Baynes, Paul Chandran. *A study of the electrical conduction mechanisms in thin films of flesh evaporated SnSb, BiSb and AgTe alloys.* U Madras.

7. Das, Projit Kumar. *A study of elemental abundance and solar modulation of galactic cosmic ray nuclei using ballon borne detectors.* Gauhati U.

8. Gangopadhyay, Tapati. *Crystal and molecular structures of biologically active molecules.* U Calcutta.

9. Gill, Navdeep Kaur. *Electrical magnetic and Mossbauer studies of Mn^{2+}, Cr^{3+}, and Sn^{4+} substituted lithium ferrites.* IIT, Delhi.

10. Kapoor, Rita. *Diffuse x-ray scattering from interstitials in a general lattice.* U Madras.

11. Kulkarni, Venkatrao Gururao. *Studies on hologram interferometry and its applications to precision measurements.* U Delhi.

12. Manohar, V. *The study of electronic structure and defects in solids by positron lifetime techniques.* U Madras.

13. Raghu Kumar, Akkala. *Acoustic remote sensing of coastal boundary layer at Visakhapatnam.* Andhra U, Waltair.

14. Rajendra Kumar. *Hyperfine interaction studies of some iron alloys and compounds.* U Roorkee.

15. Ramnathan, Deoki. *Imaging of surface using a field ion microscope: Its scope and limitations.* U Poona.

16. Syed Sajjad, Mehdi. *A study of electromagnetic properties of 3H and 3He with non-local separable potentials.* U Delhi.

17. Sanyal, Sumitra. *Studies on some paramagnetic compounds using ESR technique.* U Calcutta.

18. Satish, Chandra. *X-ray absorption study of some transition and rare-earth metals and compounds.* U Raj, Jaipur.

19. Singhal, Sunil Kumar. *Synthesis of superhard materials with special reference to single crystal diamond and cubic boron nitride compacts.* U Delhi.

20. Srinivasan, T.T. *Effect of jahn-teller ion on the magnetic and optical properties of some spinal ferrites.* IIT, Bombay.

21. Panikkar, T.M. Rama. *Studies on physico-chemical aspects in urolithiasis.* U Madras.

22. Xavier, C. Francis. *Contribution to the theoretical analysis of the performance of solar cells for terrestrial purposes.* U Madras.

23. Yadav, Har Pal Singh. *Study of plane and spherical shock waves and their effect on free surface conical cavities in metals.* Pb U, Chandigarh.

Chemistry

1. Agarwal, Anita. *Studies on some biologically important nitrogen containing compounds.* U Roorkee.

2. Agarwal, Anita S. *Reaction of nucleogenic chlorine atoms with liquid aliphatic and aromatic compounds.* U Poona.

3. Agarwal, Lakshmi. *Ternary complexes of some transition metals: Later transition metals with organic donors and phase free phosphates.* U Raj, Jaipur.

4. Ajaib Singh. *Study of complexes of heterocyclic bases with transition metal carboxylates.* Pbi U., Patiala.

5. Anjaneyulu, Potluri Sitaram. *Photoaffinity labelling studies in membranes.* IIT, Bombay.

6. Athle, Mira. *Studies in ylid chemistry.* Vikram U, Ujjain.

7. Bale, Murgiswamy. *Studies on proteinase inhibitors of winged bean tubers.* Kar U, Dharwad.

8. Barve, Madhav V. *Studies in the mechanism and synthetic applications of lithiation reactions.* U Poona.

9. Basak, Anjusri. *Studies on some plant terpenoids and oxygen heterocycles.* U Calcutta.

10. Batra, Anita. *Physical chemical studies of oils and fats.* Vikram U, Ujjain.

11. Begerhotta, Asha. *Polarographic examination of certain plant drugs.* U Delhi.

12. Bhatia, Vijay Gopaldas. *Preparation of anilic acid esters using novel sulphur and phosphorus reagents and a study of their reactions.* U Poona.

13. Bose, Chalasani Subhash Chandra. *Impedance and faradaic rectification studies on corrosion of anodized aluminium.* IIT, Bombay.

14. Brij Bhushan. *Studies on some new organometallic derivatives of titanium (IV) and zirconium (IV).* U Delhi.

15. Chakravorty, Bibhash. *Studies on synthesis of ion-exchange membranes for utilization in effluent disposal by electrodialytic techniques.* IIT, Bombay.

16. Chati, Nayana. *Studies in the development of analytical methods.* Vikram U, Ujjain.

17. Chawla, Ravinder Kumar. *Studies towards synthesis of corynoline and related alkaloids.* Pb U, Chandigarh.

18. Dash, Madhabananda. *Studies on kinetics of reactions and effect of structure of reactivity.* Utkal U, Bhubaneswar.

19. Deshpande, Shubhada Ramakant. *Synthesis and reactions of nitroalkenes.* IIT, Bombay.

20. Dhal, Pradeep Kumar *Studies on copolymerization of glycidyl methacrylate and alkyl acrklate monomers.* IIT, Bombay.

21. Gopala Krishna, Padegal. *A comparative phytochemical study of some Premna species.* Andhra U, Waltair.

22. Gopal Tembe, Laxmanrao. *The application of physico-chemical methods for the study of metal complexes of thio compounds.* Kar U, Dharwad.

23. Gulge, Ranjit. *Synthesis of some endesmanoids and their intermediates.* IIT, Bombay.

24. Gupta, Shashi Bhushan. *Synthetic studies in some fused heterocyclics.* Pb U, Chandigarh.

25. Haribal, Meena Madhav. *Chemical investigations of medicinal plants.* IIT, Bombay.

26. Jayswal, Sushma. *Chemical investigation of amino acids and proteins of some Indian plant weeds.* Vikram U, Ujjain.

27. John, K.T. *Advances in the chemistry of hydroxamic acid.* MSU, Baroda.

28. Kalyanasundaram, R. *Kinetic studies on the bromination of certain anilides and anisoles in aqueous acetic acid.* U Madras.

29. Kulkarni, Vijaykumar Raghavendrarao. *A study of the briggs Rauscher reaction.* IIT, Bombay.

30. Madhava Prasad. *A study of photogalvanic and photo-electrochemical solar cells.* IIT, Bombay.

31. Maitra, Pradeep Kumar. *Arylamides H-hydroxy-N-ary L as analytical reagents for light metals.* RDV, Jabalpur.

32. Malhotra, Arun. *Study of interactions of some acrylic copolymers with nonionic polymers and formation of inter macromolecular complexes.* U Delhi.

33. Mallaiah, Mittakanti. *Studies on reactivities of some carbon ions.* U Poona.

34. Mehrani, Khollam. *Lanthanide complexes of Juglone derivatives.* U Poona.

35. Meshram, Namdeo *R. Toluene disproportionation and trans-alkylation with Cg aromatics over ZSM-5 zeolites.* U Poona.

36. Mohanty, Brundaban. *Kinetics and mechanism of reaction of some octahedral cobalt (III) complexes solution.* Utkal U, Bhubaneswar.

37. Munesh Kumar. *Magneto-optic properties of some transition metal ions with £-(N)-heterocyclic carbaldehyde oximes, thiosemicarbazones and dithiocarbazates.* Meerut U.

38. Muthiah, P. Thomas. *Crystallographic studies on some derivatives of nucleic acid bases and their complexes.* U Calcutta.

39. Nagar, Pankaj H. *Synthesis of steroid intermediates.* IIT, Bombay.

40. Nair, Mangalam S. *Synthetic studies towards Dodecahedrane.* U Hyderabad

41. Padhy, Ladu Prasad. *Mechanism of oxidation reactions.* Berhampur U.

42. Pardha Saradhi, Komanduri. *Phytochemical studies on Jatropha glandulifera, Jatropha curcas and Gleichenia dichotoma and synthetic approaches to selected neolignans.* U Delhi.

43. Pataskar, Suryakant G. *Studies on thermal decomposition of solids in catalyst preparation.* U Poona.

44. Patel, J.M. *Studies on drug potentials.* Bhavnagar U.

45. Perincheery, Aravindakshan. *Effect of cholesteric liquid crystalline compounds on polymerization of vinyl monomers* IIT, Bombay.

46. Pullaiah, Kambhampati China. *Chemical constituents of some Dictyotaceae species.* Andhra U, Waltair.

47. Raghava Reddy, Avutu Veera. *Chemical examination of Bauhinia racemosa Lamk. B. purpurea Linn. and Terminalia alata heyne ex. Roth.* Andhra U, Waltair.

48. Raina, Renu. *Iron (III) complexes with chelating agenis of pharmaceutical importance.* IIT, Bombay.

49. Rajwant Singh. *Thermodynamics of some binary mixtures.* Pb U, Chandigarh.

50. Ramesh, M. *Studies in the synthesis of the alkaloids of the Rutaceae and their analogues.* U Madras.

51. Ravindran, Rajam. *Studies in oxidation with BIS-(Tributyltin) oxide and bromine.* U Madras.

52. Raychaudhuri, Sukla. *Studies on the properties of the tubulin microtubule system.* U Calcutta.

53. Saikumar, C. *Studies on castor oil-urethane and castor oil-urethane oligomer networks.* U Madras.

54. Sambasiva Rao, K. *Chemistry of caged polycyclic systems.* U Hyderabad.

55. Sawal, Kewal Krishan. *Studies in the synthesis of some benzopheenthridine alkaloids using benzene and photo initiated reactions.* Pb U, Chandigarh.

56. Sharma, Shradha Nand, *Studies of some environmental pollutants in the urban area of Delhi State.* U Delhi.

57. Sharma, Vasant M. *Macrolides.* U Poona.

58. Sharma, Vijayshri. *Studies on complexes of substituted thioureas with various transition metal ions.* RDV, Jabalpur.

59. Shreelata, Nair. *Tissue culture in Annona sp. P.* U Poona.

60. Shrotri, Vidyadhar R. *Studies on mass transfer in packed columns.* U Poona.

61. Singh, Devendra Prasad. *The study of kinetics and mechanism of oxidation of some organic compounds by hexacyanoferrate (III) ion in alkaline solution.* Mag U, Bodh Gaya.

62. Singh, Shashank Shekhar. *Metal complexes of triphenylphosphine selenide.* Mag U, Bodh Gaya.

63. Soundararajan, G. *A study on thin layer chromatographic behaviour and associated properties of some neutral metal dithiocarbamates.* U Madras.

64. Suresh, R.V. *Studies in oxygen heterocyclics-chalcone intermediates in the synthesis of dihydropyrano—and pyranoisoflavones.* IIT, Bombay.

65. Surinder Kumar. *Studies in Azomethines.* Pbi U, Patiala.

66. Tewari, Suresh. *Complexation behaviour and analytical potentialities of heterocyclic azo dyes.* U Delhi.

67. Tiwari, Vishwas Kisan. *Dielectric and visco-elastic properties of polymer+liquid crystal systems.* IIT, Bombay.

68. Thakur, Uma. *Studies in chemistry of C-N bond in Schiff bases.* Pbi U, Patiala.

69. Varadarajan, Narasimhan. *Solid state properties and catalytic activity of B. site substituted lanthanum colaltite.* IIT, Bombay.

70. Venkataramana Reddy, B. *Synthesis and spectral studies of some 1, 2-diaryl-3- arylcyclopropanes.* SVU, Tirupati.

71. Vinod Kumar, B. *Physico-chemical studies of transition metal chelates of heterocyclic carboxylic acids.* OU, Hyderabad.

72. Yogendra Kumar. *Synthesis and characterisation of transition metal complexes of some nitrogen-oxygen donor ligands.* U Delhi.

Earth Sciences

1. Ajit Kumar Reddy, T. *Petrological studies of Kimberlite and associated gneissic rocks of Vajrakarur Area, Anantapur District. Andhra Pradesh.* OU, Hyderabad.

2. Arunachalam, Ashok. *Geomorphology of the Deccan Volcanic Province.* IIT, Bombay.

3. Bhattacharya, Swapan Kumar. *Geochemical and petrological aspects of spontaneous combustibility of selected Indian coals.* ISM, Dhanbad.

4. Bheemesha. *Mineralogy and utilisation technology of laterites from Western India.* IIT, Bombay.

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Editor :
M. S. RAMAMURTHY

Task Force on Distance Education Meets in New Delhi

The first meeting of the Task Force on Distance Education constituted by AIU was held on March 18, 1985 at AIU House. The meeting was presided over by Prof. G. Ram Reddy, VC, Andhra Pradesh Open University (now Special Officer, National Open University, Delhi) and was attended by Dr. K.G. Deshmukh, VC, Amravati University, Dr. S.V. Chittibabu, VC, Annamalai University, Dr. L.P. Sinha, VC, Himachal Pradesh University, Dr. S.D. Gogoi, VC, Dibrugarh University, Dr. (Smt.) Jyoti H. Trivedi, VC, SNDT Women's University, Prof. S. Sampath, Director, IIT Kanpur and Dr. Jagdish Narain, Secretary, AIU. Prof. V. Natarajan, Project Director, AIU acted as Member Secretary.

Dr. Jagdish Narain, Secretary, AIU, in his brief introduction recalled the resolution adopted at the Annual Meeting of AIU held at Annamalai University to constitute a Task Force to go into the details of Distance Education with terms of reference: (i) to study systematically the existing correspondence courses offered by universities; (ii) to outline the basic concepts and principles of distance education that can be undertaken; (iii) to suggest appropriate communication technology in the context of what is likely to be available in the Indian scene in the next ten years; and finally (iv) to work out modalities of implementation of distance education as a supplementary mode of education to the conventional formal system. He suggested that the Task Force may address itself to all the issues connected with correspondence courses, distance education and open university.

Prof. Natarajan raised the following points for discussion:

(1) A systematic collection of information in respect of correspondence courses, syllabus, lesson and other resource materials, examination system, organisation of contact programmes and the like.

(2) To undertake a comparative study of all these correspondence courses on the basis of what is given in (1) above.

(3) The quality and standard of these correspondence courses.

(4) To explore the possibility of a National Open University more for undertaking research and development work in Distance Education than as one to conduct courses. Possibility of this National Open University to coordinate, define and monitor standards in Distance Education offered by the State Open Universities.

(5) The basic and fundamental concepts of Distance Education in perspective in the context of using a variety of resource materials including the printed text materials, audio lecture recording, audio-visual aids to learning, video cassette recording both in curricular and enrichment areas.

(Continued on page 11)

Making of Our New Education Policy

Satya Pal Ruhela*

The burning topic of the day in India is that a new education policy is right now on the anvil and the Prime Minister has announced that it would be implemented with effect from July when the new academic session begins in schools, colleges and other institutions. The Prime Minister's announcement that puts a much constraint on the process of the formation of the new policy. There has to be post haste and there are problems all around.

The Prime Minister and the Education Minister are nodoubt earnest, enthusiastic and open to new ideas from any one. They have so far emphasized only a few things in their manifesto of educational changes, namely delinking degrees from jobs, vocationalization of school education, examination reform, involving mass media in the promotion of educational programmes, value orientation in school education, checking the number of students who go in for higher education, and universalization of education.

None of these suggestions are, however, new. Of course, they are important and every one talks about them; we now hope that something concrete would emerge under the youthful leadership at the centre.

One would like to know the objective criteria for the formulation of a new functional educational policy for the socio-cultural and politico-economic reality that India today is. Neither of the members of the panel or the numerous professional commentators on the Indian educational scene have so far presented before us any comprehensive and coherent set of such criteria.

The Criteria

It appears to me that the new educational policy ought to fulfil a number of criteria :

(1) It must not demolish everything of the past. Thus it need not be outright new, but it should be aimed at reconstructionism in Indian education. It must be able to state some bold policy decisions to be implemented on priority basis; its major focus should not be blurred by trying to say everything on each and every educational ill of the society. It must seek to discover and present the most crucial areas needing utmost attention. In the contemporary Indian societal context, pre-primary school children, women, handicapped people, Scheduled Castes and Scheduled Tribes and other Backward Classes (including nomadic communities), rural and urban slum-dwellers, and teachers at all levels deserve much greater attention than the upper and middle classes. The nation has to be kept united and integrated at any cost, and the new education policy has to come out with bold suggestions in this direction.

It must seek to change the existing "Banking Model" of education in favour of "Conscientiation Model" of education. So far Education policy statements of 1968 and 1977 did not care for it. Unless this is emphasized by the new education policy, education cannot really be a potent instrument of social change, social reform and elimination of exploitation in India. It must be evolved on the basis of wide discussions among its reference groups in various forums at the Centre as well as in the States, otherwise they might not feel committed to accept and implement it wholeheartedly. It must come out with bold suggestions as to how vocationalisation of education at the school stage would really be possible, effective and useful, and how it would really reduce the number of those going in for higher education. It must state clearly and boldly how with the constant shortage of funds for education, teaching, research, publication, extension etc. will improve and modernise so as to meet the demands of our society. It must clearly state how corruption, discrimination, favouratism, decay of social and moral values, unaccountability, and widespread anomalies in our educational institutions specially in technical and vocational institutions, and universities can be checked. It must lay down bold and honest objective criteria for the appointment of Vice-Chancellors, Directors etc. It must state clearly its stand on the so-called public schools and public colleges and such elite institutions, which fleece their clients mercilessly. It must suggest clearly how coordination of various agencies has to be developed so that learning webs emerge, learning climate develops and the focus changes from teaching to learning. It must provide for saving our people from the "future shock"; bold suggestions to give functional futuristic orientations of our education are badly needed now. It ought to be bold enough to reemphasize the need of the useful and reformed elements of many of our earlier useful experiments like Gandhiji's basic education and "Pre-Basic School", Multipurpose schools" etc. It must come out with bold suggestions for the development of functional social and moral values in students and teachers.

It must state clearly how education would cut at the roots of social stratification and exploitation, undemocratic, non-secular and non-socialistic tendencies, and how it would act as an instrument of achieving social mobility, modernisation and social and moral uplift of our people.

Lastly, it must state how teachers, researchers, bookwriters in regional languages etc. would be kept satisfied and motivated to do their task in a committed manner. It must also state how the

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*Dean, Faculty of Education,
Jamia Millia Islamia, New Delhi.*

Government would like to curb the anomic conditions prevailing in our educational institutions—specially universities and colleges.

Suggestions

It will be very presumptous on the part of the framers of the new education policy to think that the existing educational policy was totally wrong and that they would really be able to invent or bring in radically new things. As a matter of fact, what is needed is a serious rethinking on all sorts of our earlier educational ideas, experiments and research findings, and a shifting of the emphasis in many cases. What actually led to the failure of the earlier education policy was that many of its items were not implemented in all seriousness due to reasons of political expediency, administrative inefficiency; uncreativity, and lack of fixing up of accountability for the dismal failures of innovations. More than teachers, the educational administrators have been responsible for our educational crisis, and more than educational planners, our politicians have been responsible for making a mockery of the pious declarations in the earlier education policy.

When the nation has once for all accepted Hindi as its national language, regional languages as potential media of higher education, and three languages formula necessary for national integration, they have to be there in the new policy with greater emphasis. The constitutional guarantee to provide free and compulsory education up to 14 has been misconstrued by earlier educational workers as limited to 6 to 14; actually it has to cover every child from 3 to 14. This must be clearly emphasized, which means that the development of pre-school education should receive greatest consideration. How to save the masses from the exploitative tentacles of English medium Nursery school is an important question, and the new education policy has to make ample provisions for providing quality pre-primary education with national moorings in inexpensive nursery schools to be opened in very large number. The condition of the functioning of State Hindi Granth Academies and Urdu Academy which are charged with the responsibility of producing text books in regional languages is utterly pitiable, neither they are able to produce really useful university level books, nor sell them. Administrative ills plague them. School, and college teachers are in fact not motivated and helped adequately by either of these academies nor by the UGC. The new Education Policy will have to focus on the revitalization of these agencies.

Despite over a decade long much ago about examination reform in India, nothing substantial has happened. Professors and other authorities, corrupted by their age-old antics of "give and take in examinerships" prefer one shot annual examination, essay type questions, and protest against the suggested examination reforms like Question Banks, Internal Assessment by teachers, objective and short answer type questions, etc. Why has the earlier policy suggestion "to make evaluation a continuous process" not been implemented? This is not only a good suggestion but one only available remedy for many of the grave ills of our educational system. The new policy must go ahead in making radical changes so that it gets implemented quickly.

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It is widely known that despite much talk of improvement of standards of education, training and research in colleges, universities and professional and technical institutions for years, we are hopelessly lagging behind in standards. Those institutions who have powerful political god-fathers manage to snatch lion's share of funds from UGC and the Central and State Governments, while others have to starve of funds and suffer in quality. The new policy of education should devise objective and uniform standards for all educational institutions of one kind, and seek to enrich and improve them by providing adequate funds for them. The non-formal aspects of education in the form of correspondence education and part-time education and adult education etc. has to be all the more strengthened, but there has to be some system to assess their functioning and check the financial and academic corruption rampant in them.

It is heartening to note that Education Minister has assured us in the very beginning that he would not like to disturb or change the 10 plus 2 system of schooling, but would try his best to see that it is implemented in all states in all seriousness. However, the new policy has to be conscious of rectifying the defects or dysfunctions of this system and act in the direction of pruning its curricula. It is hightime that fads and frills in education are stopped, we learn from our past and continuing experiments done by government as well voluntary, aided as well as unaided institutions, and act imaginatively to give to the nation a very convincing educational charter.

We shall have to be very realistic about our nation's future demands, and how we can prepare our students to meet them. Not only our institutions have to be provided adequately with hard wares, there are many inexpensive suggestions which can easily be implemented in our educational institutions in this direction, like starting "Future Councils" in schools and colleges, devising future games, devising curricula to develop FFRI (Future-Focussed Role Image) in students at all levels. Environmental education in human values, education for international understanding, family life education and education of Indian culture are essential concepts which ought to be re-emphasised with all force at the command of the framers of the new policy.

Lastly, I am convinced that unless the conscientization model of education as advocated by Paulo Friere is adopted in our schools, colleges and universities, it is absolutely impossible to relate education to the realities of life, to make it an agent of social change and national transformation, and make our youth practical, nationalist, mature and forwardlooking in their attitudes. □

Some Thoughts on Agriculture in the Seventh Plan

Malcolm S. Adiseshiah*

The XVII Lal Bahadur Shastri Memorial Lecture was delivered by Dr. Malcolm S. Adiseshiah at the Indian Agricultural Research Institute, New Delhi on 1st Feb., 1985. The lecture is being published in two parts. The first part appears below.

A Note of Thanks

I am honoured that the Indian Agricultural Research Institute has invited me to deliver the XVII Lal Bahadur Shastri Lecture and I thank the Institute for according me this privilege. Lal Bahadur came from a poor family, so typical of the majority of our rural and agricultural folk. Having lost his father in his infancy, he relied entirely on his innate qualities of industriousness, integrity, patience and self-reliance for his life as a student at Banaras in the school and the Vidyapeeth. Not many, I am sure know that his last name Sastri was not a caste designation as it is in my part of the country, but was a degree of excellence in Philosophy earned at Kashi Vidyapeeth in 1926. Young Lal Bahadur set himself the goal of service to the poor and down trodden and later to the country as a whole, inspired by Gandhiji to rise in the world 'purely on merit and good work', as he repeatedly told himself and his friends. As a member of the Servants of the People Society he worked among the so-called out castes, whom he described as the people of God, and later used his first hand knowledge of agricultural conditions and the problems of inequitable land ownership and relations, to produce in 1939 a masterly report on land reforms in UP. He worked on rural and agricultural issues as member of the UP Congress Committee, as Legislator and Minister in UP and rose to be the Prime Minister of the country, alas for an all too brief period of nineteen months and two days. This is a memorable saga for all of us today, of a man born in poverty who won recognition, including the highest recognition that the country has to offer, by his talents and sacrifice, always making it known that he represented the poor, of whom 'the man behind the plough' was his symbol, as he said. Through him the politics of the country acquired honour, integrity and dynamism, and if the cruel hand of death had not taken him away from us, he would have given our agricultural scene and rural life a new deal, for which they have been looking since the days of our independence. It is in memory of that great and ineffable personality, Lal Bahadur Sastri and all that he gave us as a proud and rich heritage, that I have chosen as the theme of this XVII Lecture which commemorates him and his fragrant memory, Agriculture in the Seventh Plan.

Quantitative Perspectives

We will be ending the Sixth Plan with a foodgrain production of 153 million tonnes and for the Seventh Plan the country could produce 173.5 million tonnes if the past trend rate of growth of 2.6 between 1970-71 to 1983-84 is followed, or 190 million tonnes if the 5 percent rate of the Approach Paper to the Seventh Plan is followed. At the end of the Sixth Plan, the country's population is estimated to be 743.22 million and at the end of the Seventh Plan, the population will be 803 million, (if the Approach Paper's optimistic assumption of a population growth rate of 1.3 percent during the Seventh Plan is realised. We began the Sixth Plan with a rate of 2.25 per cent, and further the Registrar General's projection for 1990 is 820.57 million). This means that the daily per capita gross availability of good grain* which is 564 grammes at the end of the Sixth Plan will rise marginally to 592 grammes if the 173.5 million tonnes production comes true or to a better 648 grammes if the 190 million tonnes (Approach Paper) forecast is actualised at the end of the Seventh Plan. The 190 million food grains production is also the Planning Commission assumption to reduce poverty by 55 per cent during the

Dr. Malcolm S. Adiseshiah delivering the Lal Bahadur Shastri Memorial Lecture.

Chairman, Madras Institute of Development Studies.

VII Plan. Under these conditions, it seems clear that we have no alternative but to work for the 5 percent growth—the 190 million tonnes production perspective—for the Seventh Plan.

A more detailed break down of the Seventh Plan food grains and cash crops output in relation to the Sixth Plan actuals is set forth in the table below :

TABLE I

Crop	Sixth Plan at 1984-85	Seventh Plan at 1989-90	
		at 2.6 percent	at 5 per cent
A. Food grains	153 million tons	173.5 million tons	190 million tons
1. Rice	60 million tons	67.8 million tons	75 million tons
2. Wheat	46 million tons	51.9 million tons	56 million tons
3. Millets	34 million tons	40.1 million tons	42.5 million tons
4. Pulses	13 million tons	14.7 million tons	16.5 million tons
B. Non food grains		4 percent	
1. Oilseeds	125 million tons	150 million tons	
2. Sugarcane	190 million tons	225 million tons	
3. Cotton	80 lakh bales	96 lakh bales	
4. Jute & mesta	90 lakh bales	105 lakh bales	
5. Tea	705 million kg	765 million kg	
6. Coffee	180,000 tons	220,000 tons	
7. Rubber	185,000 tons	265,000 tons	
GDP	Rs. 177582 crores at 1984-85	Rs. 2,26,644 crore prices	

Source : Agricultural Situation in India, Ministry of Agriculture releases and my projections.

**The gross availability of foodgrains includes the 12-13 per cent that goes towards seed and animal feed requirements and wastage, and ignores imports and/or exports of foodgrains, as well as foodgrain stocks with the government (the buffer and operational stocks) as well as unknown stocks held by traders. That is, Net availability of food grains-gross output—(seed and animal feed use+exports + government buffer+stocks with traders)+imports, averaging about 80 per cent of the gross output.*

The table shows some lag in millets and pulses among food crops and a slow growth in oil seeds and cotton among cash crops. There is need for some further attention on these 4 important agricultural products because all of them are either part of what are called wage goods, particularly milles and pulses, the later also being the single most important source of protein for the majority of the people, who by necessity are vegetarians, or inputs into wage goods, like oil seeds and edible oils, which should make us self sufficient in the Seventh or at the latest by the Eighth Plan, and cotton and clothing.

Sources of Growth

The 5 percent growth in food grains production and the 4 per cent in cash crop production during the Seventh Plan, which are a near doubling of the trend rates of both groups, are feasible if the four sources of growth are optimally developed during the Plan period.

The first source is the expansion of the cultivable area which can occur both through (a) increase in the area under agricultural cultivation and (b) increase in cropping intensity. Taking up first the spatial expansion possibilities, the projecting from the data available from the last agricultural census, of the 328.8 million hectares of land in the country in 1983-84, 142 million hectares are not available for agricultural crops (being used for non agricultural purposes, forest, pasture, roads, housing (though for something like 25 million hectares the census report is that no data is available), 142 million hectares are reported to be under crop production (net sown area), and 24 million hectares are fallow land and 16 million hectares culturable waste. These figures do not take into account the continuing destruction of the top soil of the cultivated land through erosion by water, wind, sun as well as the loss of soil resulting from water logging which makes for salinity and alkalinity, faced in some of our most fertile lands in South Punjab, in Krishna and Godavari basin and in the Gangetic and Cauvery deltaic region. If the necessary and somewhat heavy investment is made in the needed infrastructure to reclaim our 40 million hectares of 'cultivable waste and old and current fallows' which the Approach Paper refers to over four or five plan periods, and simultaneously our farmers are helped in cultivating the land with soil and water conservation techniques to prevent the serious soil erosion and the growth of alkaline/saline lands' now taking place, I have no doubt that from this one source there can be a 20 to 25 per cent increase in our crop production over the 4 or 5 plan periods. That is how I read the Approach Paper on this issue.

A second source of expansion is through increase in cropping intensity as measured by the number of crops raised per hectare. The well known case of increased cropping intensity in the growing of a third crop in most irrigated lands, either two paddy crops followed by pulses and oil seeds in the South or the spectacular increase in the growth of kharif paddy and summer cotton in Punjab, Haryana and Western Uttar Pradesh. This possibility of increasing the total output by rotating crops and growing atleast 3 crops in irrigated and 2 crops in rainfed lands needs to be supported not only by the usual inputs of quality seeds, fertilisers and pesticides etc., but also by a research and extension system which can carry to the door step of the farmer the crop rotation that is specific to his soil and agro climatic reality. Here the agricultural universities in Punjab and Haryana and Western UP and here in Pusa are doing the kind of job on increasing cropping intensity, which the agricultural institutions in other areas need to follow up. It is difficult to isolate the extent of increased production that results from cropping intensity because it is usually found alongside of increased yield due to increased area of cultivation, use of irrigation and mechanisation. The nearest case to identifying the result of cropping intensity is the Punjab, because there out of the total reporting area of 5 million hectares, 4.21 million hectares are net sown area with little possibility of adding to it. Taking Punjab, an attempt has been made to compute the value productivity and other related variables in 3 groups of districts in the state as set forth in the table below :

TABLE II

Districts	Average valve productivity (Rs./ha)	Fertiliser use (kg) cultivated area	Mechanisation No. of tractors per 1000 ha	Cropping intensity
1	2	3	4	5
1. Ludhiana, Jullundur, Patiala and Sangrur	6408	218	32.0	171
2. Kapurthala, Gurdaspur Ferozpur, Faridkot	5322	215	25.2	159
3. Rupnagar, Amritsar, Hoshiarpur and Bhatinda	4457	134	17.8	158
4. Punjab as a whole	5362	184	26.0	165

Source : Panjab University Publication.

In the table, irrigation which underlies the data in column (2), the average value productivity, is the major determinant and determines the use of other inputs set forth in column (3), (4) and (5). It is also seen that cropping intensity, is like fertiliser use and mechanisation, positively correlated with irrigation (average value productivity). I believe that through developing similar cropping intensity in all other states, a 10 per cent increase in production over a decade can be brought about.

A fourth factor which can increase the output of food grains is improved productivity as measured by per hectate yield. This measure varies between crops and between states. A first broad indication is that except in the case of cotton (which is, as noted earlier, in most areas a second or a third crop), the productivity trend as indicated by quintal per hectare is steadily rising for non-food crops in relation to food crops through the four years 1979-80 to 1982-83 as the Table III shows (Given on next page).

The data in the table is explained by the fact the area under non food crops has been expanding faster than that under food crops, through some 77 per cent of the cultivated area is still under food crops. As per hectare yield improves, the area under food crops—wheat, maize, rice, and bajra—which has been expanding by 29 per cent between 1949-50 and 1982-83 will begin to decline, as it is doing the world over. With the emphasis on productivity in VII Plan, an increase in per hectare yield can yield a 5 per cent increase during the Plan period.

To identify where this higher per hectare yield is needed, we must turn to the per hectare yield by states and by crops. Here against the all India food grains production compound growth rate of 2.24 per cent for the post green revolution period 1968-69 to 1980-81, Kerala recorded negative growth (—0.14 per cent) and 9 other States recorded rates well below the all India rate, namely, Assam (0.87 percent), Bihar (0.90 percent), Jammu and Kashmir (1.65 per cent), Madhya Pradesh (0.38 percent), Orissa (0.43 percent), Rajasthan (1.49 percent), Tamil Nadu (1.38 percent), Uttar Pradesh (1.99 per cent) and West Bengal (0.88 percent). It is on these 10 States that the Seventh Plan should concentrate to raise the productivity of food grains production, and not only on the 6 eastern States mentioned in the Approach Paper. On individual crops for the same period, negative per hectare yield rate in rice is registered in one State, namely Madhya Pradesh (—0.77 percent), and below the all India per hectare yield rate of 1.51 percent registered in seven other states, Assam (0.15 percent), Bihar (0.006 percent), Jammu and Kashmir (1.41 per cent), Karnataka (1.17 percent), Orissa (0.10 percent), Rajasthan (1.46 percent) and West Bengal (0.47 percent). In Jawar, below the all India per hectare yield rate of 3.17 percent is recorded in four States, Andhra Pradesh (2.33 per cent), Madhya Pradesh (0.23 per cent), Rajasthan (0.38 percent), and Uttar Pradesh (0.60 percent). In Bajra, two States recorded negative per hectare yield rates, Haryana (1.51 percent) and Rajasthan (—2.02 percent). In Maize also two States registered negative per hectare yield rates. Rajasthan (—1.50 percent) and Uttar Pradesh (—0.88 percent). In cash crops, (where the post green revolution may not be of the same significance, in the same period 1968-69) to 1980-81, negative per hectare yield rates in groundnuts were recorded in two States, Madhya Pradesh (—0.54 percent) and Uttar Pradesh (0.83 percent) and below the all India per hectare yield rate of 1.35 percent in Andhra Pradesh (0.64 percent). Karnataka (0.47 percent)

TABLE III

Quintal per hectare

	Food Crops						Non Food Crops			
Year	Rice	Wheat	Jowar	Gram	Maize	Sugarcane	Groundunt	Cotton	Tea	Rape and Mustard
Weight	(33.98)	(12.96)	(4.86)	(3.58)	(3.06)	(7.01)	(4.82)	(3.01)	(1.85)	(1.78)
1979-80	10.8	14.4	6.9	4.8	9.8	480.1	8.0	1.6	15.3	4.1
1980-81	13.4	16.3	6.6	6.6	11.6	578.4	7.4	1.5	15.2	5.5
1981-82	13.1	16.9	7.3	5.9	11.6	583.6	9.7	9.7	14.7	5.4
1982-83	12.3	18.4	6.6	7.0	11.0	562.1	7.6	1.6	15.4	5.9
Annual% rate of increase 1952-53 1982-83	2.0	3.1	2.0	0.8	1.8	2.0	0.6	1.9	1.7	1.2

Source : CMIE

and Tamil Nadu (0.74 percent. In Cotton, Punjab recorded negative yield rate (—0.67 percent) and four States below the all India per hectare yield rate of **2.54** percent, namely Gujarat (1.31 percent), Haryana (1.15 percent), Madhya Pradesh (0.057 percent), and Tamil Nadu (0.10 percent). In Jute, Assam recorded negative per hectare growth (—0 37 percent) and below the all India rate of 0.91 per cent were recorded by Bihar (0.85 percent) and Orissa (0.88 percent). In Sugarcane minus per hectare yield growth rates were registered by Bihar (—1.23 percent) Haryana (—0.67 percent) and Karnataka (—1.49 percent) and below the all India per hectare yield growth rate of 1.10 percent by Andhra Pradesh (0.18 percent) and Uttar Pradesh (0.57 percent). Thus to attain the 5 percent increase in agricultural output referred to earlier, productivity increase in rice are needed in 8 States, in millets in 7 States, in groundnut in 5 States, in cotton in 5 States, in jute and mesta in 3 States and in sugarcane in 4 States, in all of which the minimum aim should be to reach the all India per hectare yield in the Seventh Plan.

Constraints to Growth

The Seventh Plan will face several constraints to growth.

The first constraints is the serious fluctuations in the annual yield of food grains and cash crops. These fluctuations are on the one hand annual in that the annual food grains output varied widely as between 1980-81 at 1 29 million tonnes, 1981-82 133 million tonnes, 1982-83 128 million tonnes, 1983 84 150 million tonnes and 1984-85 153 million tonnes, and agricultural production recorded similar percentage swings during the five years between 15.7, 5.5, 4.0, 12.5 and 2 percent. On the other hand, food grains production goes through a period of stagnation followed by a breakthrough peak, which is again followed by stagnation. The 1983-84 production of 150 million tonnes of food grains comes at the end of a 4-year period when the triennial average food grains production stagnated at 123 million tonnes. In the period 1954-57 the triennial average was 70 million tonnes which peaked to 70.40 million tonnes in 1959-60. Again from 1960-61 to 1965-67 the triennial average was stagnant at 80 million tonnes, rising to 104 million tonnes in 1970-71. During 1971-74 the average declined to 100.5 million tonnes and then increased to 123.16 million tonnes in 1977-78. From 1978-79 the triennial average has been 123 million tonnes until 1982-83 when it rose to 130 million tonnes, as earlier noted. This last period includes the high period of 133.1 million tonnes in 1981-82, which has been surpassed by the 150 million tonnes in 1983-84 and 153 million tonnes in 1984-85. The first task during the Seventh Plan is to so manage our foodgrain and agricultural production so as to reduce, if not avoid, the annual fluctuations and the swings between periods of stagnation followed by sharp upward movements and aim at some stability in production flows.

[To be concluded]

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Shri Bal Ram Jakhar Addresses Convocation of GAU

Excerpts from the Convocation Address delivered by Shri Bal Ram Jakhar, Speaker, Lok Sabha, at the Gujarat Agricultural University, Junagadh, on February 1, 1985.

"..The advancements in the field of science and technology are a great distinguishing feature of our times. It is surely in these fields that human creative power finds its chief means of expression. In India, as also in most of the developing and the developed countries, the Government plays a prominent role in the development of scientific and technological research and activities. We owe it to our great leader, Pandit Jawaharlal Nehru, who laid great emphasis on Science and Technology. Himself a Science Graduate from Cambridge University, he succeeded in his efforts to give a scientific temper to our national development. The vast network of laboratories for agriculture, medical and industrial research, throughout the country, is a living tribute to his farsightedness and faith in the application of science and technology in accelerating the pace of development. Our late Prime Minister, Shrimati Indira Gandhi, illustrious daughter of an illustrious father, gave a further fillip to Science and Technology. Our scientists explored new vistas in space, oceans and snowbound lands. Our present Prime Minister, with all the energy and enthusiasm which comes with youth, is also very keen and conscious to see that development in this sphere is so planned as to reach the grassroot level so that the common man is benefited. It is, in fact, a great challenge for the scientists and technologists. The nation looks towards you—my young friends—as to how you respond and succeed in this noble mission.

"Being a farmer myself, I feel quite at home in the midst of those who are equipped to serve the cause of agriculture, so near and dear to my heart. If I can motivate you to use your knowledge and experience in latest techniques, for improving the lot of the toiling peasantry, my purpose of coming here and addressing you is adequately served.

"Ours is a predominently rural and agricultural economy. We have large segments of small and marginal farmers whose fate is sealed by the vagaries of weather. The labour put in and the investment made by the farmers, in rearing their crops, are always at the mercy of the inclemencies of unpredictable weather. Their crops can be hit by rains, floods, hail-storms, drought and what not. Farming has, in fact, come to stay as a most uncertain and unremunerative profession in the world. The agricultural produce is the only item where the price is determined not by the producers but by somebody else. What a tragedy! In spite of all these handicaps, our farmers still stick to this unremunerative vocation. Why? Because of their love for the land and their ignorance about any other profession. It is only this class of the people which knows no hoardings, blackmarketing or any other bungling.

"The prices of agricultural produce should be so fixed that these are not only remunerative but offer enough incentive to the farmers, to increase production. The best way would be to devise a formula to link rise or fall in prices of inputs with the prices of agricultural products and to fix a reasonable margin of profit, at every level, so that the producer gets reasonable price, the consumer is not hit and the trader gets his service charges. The bane of the present system is that producers and the consumers are equally hit. How to get out of this difficult situation? I think the farmers cooperatives can be the right answer. The doyen of the cooperatives can be the right movement—Dr. Kurien—is with us. I have seen his achievements in the field of Dairy Development, on cooperatives line, at

Shri Bal Ram Jakhar (second from right) arriving to deliver the convocation address.

Anand. That is something to be seen to believe. Fortunately, he occupies the pivotal position of Vice-Chancellor of this University. With his vast experience, I believe, he will be able to give a new direction to effectively stop the exploitation of the farming community.

"We have, no doubt, brought about the green revolution. But, in the area of food, enough is not enough, particularly when our population is increasing by leaps and bounds. There is no substitute for food and food would be in greatest demand by the end of the century. We should, therefore, produce not only enough for our own people, but aim at exportable surplus. As a farmer and as one who has been the tiller of soil, I can say with firm conviction that this is not beyond the realm of possibility. The most important task for our agricultural scientists will, therefore, be to make the green revolution, which has occurred only in North-West India, still greener, in the rest of the country as well. We should not underrate the wisdom of the illiterate farmer, who is toiling with mother earth for centuries and is capable of achieving any targets. Nothing can match his practical wisdom. You have just to tell him about the latest research; teach its applicability and see the desired results. The stress should, therefore, be on basic research to create new genotypes, identifying and incorporating specific genes resistant to diseases and pests, and other stress factor. These are hosts of other fields like expansion of the cultivated area, intensification of cropping, extension of irrigation facilities including better utilisation of existing facilities, appropriate measures for accelerating improvement in yield and new patterns of land use etc. We have limited water resources for irrigation. Therefore, ways and means have to be devised to use minimum water for maximum benefit. Then only we would be able to keep pace with the increasing pressure on food production to meet our needs.

"The crop land is expected to increase little in area. The reduction in the likely role of expansion in area under crops, would be due to many factors, such as, urban growth, appropriation of land for roads, railroads, air-fields, industrial plants and other development purposes. The emphasis in future will, therefore, have to be on increase in production per hectare. Thus, the agricultural research will have to be directed towards evolving a land-saving rather than land-using technology. The land which is now hard pressed under the load of mounting population, can neither be produced nor stretched or expanded. The development of land-saving technology therefore, needs a more intensive research in developing high yielding varieties of crops, agronomic research to support new cropping system, a soil and water management research, researches in fodders and feeds, control of pests and plants diseases and scientific management of small holdings.

"Our agricultural scientists, engineers and technologists ought to undertake more and more applied and problem-oriented research. They must be closer to the farms and the farmers to upgrade their knowledge and skills. They should go out in the field and pick up the problems for research from their direct contact and own observations. The farmers should feel convinced of the applicability of research results, under field conditions if they are to adopt them with enthusiasm.

"In the development of technology, the wisdom of those for whom the researchers have to think and plan, must not remain untapped. The research scientists should, therefore, properly discern the needs of the farmers they are supposed to serve.."

Excerpts from the Welcome Address of the Vice-Chancellor, Dr. V. Kurien, delivered at the 11th Convocation of the Gujarat Agricultural University.

"The Gujarat Agricultural University is thirteen years old. It has established four Agricultural Colleges, two Veterinary Colleges, one Home Science College, one Dairy Science College and one College of Agricultural Engineering and has started several Diploma as well as Certificate courses. It is located in four different campuses in four parts of the State. To have established this large University has been no mean achievement.

"We are proud of the research work done by the University in castor, cotton and tobacco which has helped the farmers considerably. While we are also doing research work on several other agricultural crops, our contribution there has not been as significant. We have much to do in oilseed production and in helping the farmers increase production of cereals and forage crops.

"The future policy of the University will have to be directed more towards applied research that will solve the problems of the farmers of Gujarat. This can best be done if the contact between our scienstits and the farmers is closer. We in Gujarat are fortunate to have large farmer owned cooperative organisations for processing and marketing the produce of hundreds and thousands of our farmers. We have the Gujarat Co-operative Milk Marketing Federation, an organisation of some ten lakhs farmers. We have near here the Gujarat Co-operative Oilseeds Growers Federation having a membership of nearly one lakh farmers. This organisation will own processing facilities to handle nearly one third of the production of oilseeds in the State. We have the Gujarat State Co-operative Cotton Marketing Federation which has endeavoured to achieve a vertical integration of production, procurement, processing and marketing of agricultural commodities for the benefit of farmer producers.

"As its Vice-Chancellor, it would be my endeavour to make the contact between the University and the farmers more intemate and to ensure that the University is sensitive to farmers' needs and is responsive to farmers demands. A University such as this produces graduates whose task is to increase agricultural production and agricultural productivity in the State of Gujarat. Whether our graduates are useful for agricultural development can only be judged by the farmers. Our scientists do research in our laboratories. Whether this research has been useful or not is again a matter which is to be decided by the farmers. The extent to which our farmers accept our research findings and translate these into practices on their farms, would be a proper measure of the quality of our research and the quality of our extension programmes. Therefore, whether this University is a good University or not is a matter which in the final analysis will be decided by the farmers of Gujarat. I would particularly advise our research scientists that they need to have the courage to continue to be students and the humility to recognise the unlettered villager as the wisest of teachers. It is as a demonstration of our need to work with farmers that this convocation is being held in the midst of 10,000 farmers.

"We have some problems in the University also. The administration of a University spread over four campuses is not easy. To ensure that all the campuses follow the same standards of teaching and maintain a uniformly high quality of research work, is also not easy. There is need to improve the financial discipline of our University. Our administration needs to be tightened so that the staff of the University sets an example to the students, by their discipline and hard work. The quality of teaching will have to further improve if we are to produce graduates of good quality.

"Very rapid progress is being made in agricultural production in many parts of the world. We must take note of them and equip our University and our research workers to be able to handle these complex developments, be it genetic engineering, transplantation of fertilized ova, use of unconventional sources of energy or efficient water management. We certainly should teach our graduates the use of computers. Similarly, the University must now tone up its administration by introducing efficient methods of administration including the use of computers and modern communication systems. All these will take time and money to bring about. But we must shed the old fashioned governmental system of administration as early as we can...." □

Task Force on Distance Education

(*Continued from page 1*)

(6) To consider appropriate communication technology to be adopted in Distance Education and recommendations in relation to it.

(7) To bring together experiences from other countries including British Open University, Canadian Open University and Thailand Open University through various Monographs and publications and other materials used by them.

(8) To recommend use of New Communication Technology like video, computer, satellite and an integrated approach involving multi media systems.

(9) To discuss issues relating to feasibility or otherwise of uniformity in course structure, resource materials and examinations patterns in all distance education programmes.

(10) To discuss and work out plans of action to implement distance education as a mode of education to supplement the conventional system and also a broadered scope in areas like adult education, mass citizenship education and such other areas from time to time suggested in the policy framework of Government of India.

Discussion followed and consensus emerged in regard to obtaining a status report on Distance Education, Correspondence Education and Open University, in India and from abroad; concept, definitions, materials and resources used; and finally the quality and standards. The functions of the National Open University, its linkages with other State Open Universities, Directorates of Correspondence Courses in different universities are to be looked at in perspective and recommendations made to bring in quality and comparability amongst the different organisations. It was also felt that educational technology and modern developments in Communication Information Networks should be a vital part of Distance Education in Higher Education.

It was decided that (on the suggestion from the Chairman) Prof. Natarajan, Member Secretary, may be asked to produce a detailed document for detailed discussion at the next and final meeting to be held in about 8 weeks time. □

Admission of foreign students to Indian colleges/universities

USI Arab Regional Office was established in Bahrain in 1982 with a view to promoting teaching about the United Nations system in schools in the region. The office was sponsored in collaboration with the Bahrain National Commission for Unesco (Ministry of Education) of the State of Bahrain.

USI Arab Regional Office has been publishing a quarterly magazine called Workshop of Peace, and organises competitions in painting and essay writing in order to create awareness about environmental activities in the region's schools.

In course of our activities we have been approached by students interested in seeking admission for further studies in India. They require admission basically in medical and engineering courses. There are also those seeking admission to commerce, accountancy, etc.

The present secondary education system in Bahrain is recognised as equivalent to 11 years. This necessitates that these students if admitted in India will have to go in for one-year pre-university course before applying for engineering or medicine. In some states they are directly admitted to the first year degree course.

USI Arab Regional Office is interested in evolving a simplified procedure to facilitate their admission to about 15 Indian colleges.

Colleges and universities interested in this scheme are requested to contact USI Arab Regional Office, P.O. Box 726, Bahrain or United Schools International, USO House, 6, Special Institutional Area, New Delhi-110067.

USI Arab Regional Office is further interested in appointing an experienced official to provide guidelines and information and to liaise between applicants and universities to facilitate admission through personal contacts in India.

The scheme is intended to promote mutuality between India and Bahrain.

REGIONAL ENGINEERING COLLEGE

WARANGAL-506004

Advt. No. 1/85

Applications in the prescribed form are invited for the following posts so as to reach the Registrar not later than **20-5-1985.**

(1) Professors of (a) Civil Engineering (b) Mechanical Engineering and (c) Mathematics (Scale : Rs. 1500-2500).

(2) Asst. Professors of (a) Electrical Engineering (b) Electronics & Communication Engineering (c) Computer Science (d) Metallurgical Engineering (e) Mathematics (f) Chemistry; and (g) Physics (Scale : Rs. 1200-1900).

(3) Research Engineer Grade-I in Problem Oriented Research Laboratory (Scale : Rs. 1200-1900).

(4) Lecturers in (a) Mechanical Engineering (b) Electronics & Communication Engineering (c) Computer Science (d) Physics; and (e) Chemistry (Scale : Rs. 700-1600).

(5) System Manager for Computer Centre (Scale : Rs. 1500-2500).

(6) Programmer/Systems Analyst for Computer Centre (Scale : Rs. 700-1600).

(7) Registrar (Scale : Rs. 1100-1600).

(8) Stores Officer (Scale : Rs. 650-960).

One post of Professor of Civil Engineering, the post of Professor of Mechanical Engineering and the posts of Asst. Professors of Electrical Engineering Mathemactics; Chemistry and Physics are temporary.

Higher start can be considered in case of exceptionally qualified candidates. DA and other allowances will be paid as per rules. Candidates may be offered lower posts, if not found suitable for the posts applied for.

For the posts of Lecturers, preference will be given to SC/ST candidates who are considered fit.

Application forms and details of qualifications and experience required for the above posts can be obtained from the Registrar by sending a crossed Indian Postal Order for Rs. 2/- drawn in favour of 'Principal, Regional Engineering College, Warangal' payable at the Regional Engineering College Post Office alongwith a self-addressed Re. 1.50 stamped envelope (25 x 10 cms.). Requisition received with defective postal orders or insufficient postage will not be entertained.

PRINCIPAL

RESEARCH AND TRAINING UNIT FOR NAVIGATIONAL ELECTRONICS
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING
OSMANIA UNIVERSITY : HYDERABAD-500007

Advertisement No. NERTU/ADV/1/85

Applications are invited for the following posts in the above mentioned Research and Training Unit. The appointments will be made on a contract for a period of three years. The posts carry CPF benefits and employer's contribution will be paid to all those who serve for a minimum period of 3 years.

This R and T Unit is sponsored by Department of Electronics, Govt. of India, with an initial budget of Rs. 82.4 lakhs, spread over first five years. A separate building for this unit is expected to be ready for occupation by June 1985. The unit has already established computer facilities for the use of its scientists. Further, a signal processing and microwave/navigational laboratories with equipment worth about Rs. 20.00 lakhs will be commissioned in the new building by June 1985.

Some of the research topics that are taken up by the scientists of the unit are : (i) Adaptive array processing techniques in navigation and radar; (ii) terrain modelling around ILS; (iii) computer modelling for collision avoidance system; and (iv) MLS antenna arrays.

1. **Principal Scientist : One post**

Scale : Rs. 1500-60-1800-100-2000-125/2-2500
(Gross emoluments at the minimum of scale are approximately Rs. 3150/- p.m.).

Qualifications : Essential

A good academic record with a Master's degree in Electronics and Communication Engineering or equivalent with 10 years of experience in research and development/teaching. Out of which at least 5 years should be after Post-graduate degree. The experience will be relaxed by 3 years in the case of candidates with a Ph.D degree.

Desirable

Ph.D. degree and published work of high standard. Ability to organise research groups and undertake sponsored projects independently.

Field of Specialization

Communication Systems/Microwaves/Signal Processing.

Job Description

The selected candidate is expected to lead a research group and work on technical problems faced by the user agencies. Further, he/she is to negotiate with funding agencies to initiate new projects in the broad area of navigational electronics.

2. **Senior Scientist**

Scale : Rs. 1200-50-1300-60-1900 (Gross emoluments at the minimum of scale are approximately Rs. 2800/- p.m.)

Qualifications : Essential

A good academic record with a Master's degree in Electronics and Communication Engineering or equivalent with 5 years of experience in research and development/teaching. The experience will be relaxed by 3 years in the case of candidates with a Ph.D. degree.

Desirable

Ph.D. degree with research publications.

Field of Specialization

Microwaves/Signal Processing/Navigational Electronics.

Job Description

The selected candidate is expected to undertake research problems independently in his/her field of specialization.

3. **Scientist**

Scale : Rs. 700-40-1100-50-1600 (Gross emoluments at the minimum of scale are approximately Rs. 1850/- p.m.).

Qualifications : Essential

Master's degree in Electronics and Communication Engineering/Control System Engineering or equivalent with consistently good academic record. Candidates who completed the course requirements of M.E./M.Tech. except dissertation are also eligible to apply.

Field of Specialization

Microwaves/Communication Systems/Digital Systems/Control and System Engineering.

4. **Technical Officer : One post**

Scale : Rs. 1050-40-1250-50-1600 (Gross emoluments at the minimum of scale are approximately Rs. 1900/- p.m.).

Qualification : Essential

A diploma in Electronics and Communication Engineering or equivalent with 15 years of experience in procuring, maintaining and servicing of electronic equipments. Must also be familiar with procedures related to importing of equipment.

Desirable

Experience in maintaining navigational electronic equipment.

Note-1. Higher start in the prescribed scale can be given to candidates with higher qualifications, excellent record of research publications/excellent R and D experience.

Note-2. (i) Not above 50 years for Principal Scientist.
(ii) Not above 40 years for Senior Scientist
(iii) Not above 30 years for Scientist
(iv) Not above 40 years for Technical Officer.

Note-3. Age limit does not apply to the University employees.

Application in duplicate (typed on plain paper) giving the name, date of birth, address, full details of qualifications and present employment (if any), professional experience, list of research publications and names of two referees should be addressed to the Project Director, Rand T Unit for Navigational Electronics. The application should clearly specify the post for which it is meant. Separate applications should be sent if one is applying for more than one post. Candidates working in the Government/Semi Government organizations must apply through proper channel. They can, however, send an advance copy.

The last date for the receipt of the application is **May 6, 1985.**

PROJECT DIRECTOR

Jammu Varsity's Workshop on Computer in Examination

A one-day orientation programme in the area of Computer in Examinations was organised by Examination Reform Unit of the University of Jammu in collaboration with the Association of Indian Universities, New Delhi. The main objectives of the workshop were : (1) To familiarise the participants with the potential of a computer particularly as it relates to supporting examination system; (2) To bring to them the experiences of other universities and other organisations in the matter of computerisation of their examinations; (3) To bring to the notice of participants software packages available for computerised activities in the pre-conduct, conduct and post-conduct stages of the examination system; (4) To be aware of limitations of the uses of computer in the system of examinations; (5) To explore the possibility of Jammu Varsity computerising their examination system.

In addition to the personnel of the Examination Section including Controller of Examinations, the programme was attended by Deans of Faculties, Principals of the degree colleges and officers of the University.

Welcoming the participants to the workshop, Shri Ram Sarup, Controller of Examinations mentioned that the University was facing several problems in the area of implementing examination reform, particularly in the matter of availability of familiar experts and paper-setters and the inordinate delays in the setting of question-papers and moderation of questions. He reiterated that computer should not be thought of in isolation to help in examination only but must be perceived as an aid to teaching-learning and that a comprehensive computerisation should include all the three stages of the examinations area be undertaken.

Inaugurating the workshop Prof. M.R. Puri, Vice-Chancellor of the University of Jammu drew the attention of the participants to the variations in marking standard of equally competent examiners. Such variations dealing with a few re-evaluation cases in the past had affected the credibility of the examination and that such wide variations and marking standard would have to be tackled. He also felt that the computer being a sophisticated machine should be introduced with consciousness and awareness and suggested that computer literacy should be spread in the University. He also reiterated that computer, when used as an aid to the examination, in the three stages of pre-conduct, conduct and post-conduct will help the University to introduce speed, accuracy and efficiency in examination operation. He concluded saying that adequate preparation had been made by the University to introduce computerisation in the examination system.

Prof. Natarajan, Project Director (Exams.) of Association of Indian Universities spelt out the objectives of the workshop and also explained the schedule of activities to be undertaken. He felt strongly that the personnel of Examination Section together with academic leadership should become aware of the potentialities of the computer particularly micro-processor in solving problems.

The participants were exposed to lead lectures on 'Introduction to Computer and Computerisation', 'Pre-Conduct stage of Examination and Use of Computer', 'Conduct Stage of Examination and Possible Uses of Computer', 'Post Conduct Stage of Examination and Data Processing and Analysis by Computer'.

Also, in small groups, they identified tasks and activities in the pre-conduct stage of the examination and prepared an exhaustive list. Similarly they also spent some time to go through activities in the conduct and post-conduct stages of the system.

Prof. Natarajan in the afternoon dealt with the use of computer in both conduct and post-conduct operations. He reiterated that even though not much work in India had been done to use the computer in the conduct stage, several experiments of computer aided and computer assisted teaching were being taken up in several organisations of India. He suggested that experiments in this regard may be supported in the University of Jammu with an item bank stored the memory of computer and students allowed to take the test sitting before the computer.

Prof. Y. Prakash chairing afternoon session initiated discussion bringing to the attention of the participants that such feed-back from the statistical analysis of the examination would go a long way to improve question papers which is the real crux in examination reform. He also felt that computerisation of post-conduct stage of the examination together with tabulation work can easily be undertaken and implemented in the University of Jammu. The major recommendations made by this workshop were :

(i) The Examination Reform Unit may be equipped with a micro-processor computer and software packages be developed to computerise the system of examination in the University of Jammu; (ii) In the meanwhile, the existing computer centre may initiate computerisation work with the design of application forms and development of software packages; (iii) Help may be sought from other universities in terms of software packages already developed; (iv) The University of Jammu with the help of Examination Reform Unit and Computer Centre may initiate work in regard to computerisation of pre-conduct, conduct, and post-conduct stages of the examination.

Workshop on Continuing Education at Vikram University

The Indian University Association for Continuing Education organised a 3-day Workshop on Continuing Education at the Vikram University, Ujjain from February 22-24, 1985. Sixty four delegates from the States of Uttar Pradesh, Madhya Pradesh, Rajasthan and Haryana participated the workshop. The resource persons were drawn from the SNDT Women's University, University of Poona, South Gujarat University, University of Jammu, the UGC and the IUACE.

The main objectives of the workshop were to: (i) promote awareness among the College Principals regarding the need for use of continuing education as an alternate strategy to meet the educational needs of their surrounding community; (ii) facilitate assimilation of leadership and management skills required for the implementation of continuing education programmes; and (iii) formulate course details through an understanding of knowledge and skills and their use in practical situations.

The inaugural address was delivered by Shri T.N. Tandon, Vice-President, Grasim, Birlagram. Shri Tandon stressed the mutually beneficial need of contact between university and industry in the matter of training and retraining of manpower and in the matter of meeting the social development needs of the employees. Dr. D.R. Sharma, Vice-Chancellor, Vikram University, Ujjain, in his presidential address, referred to the efforts made by his University in establishing meaningful links with the community both in terms of the weaker sections and the other sections. The university was an integral part of the city's culture; it would further explore ways of contributing to the city's socio-economic and cultural growth. Dr. M.L. Mehta, Joint Secretary, University Grants Commission, felt that the colleges as the grassroot units in higher education had the physical and manpower facilities to provide additional educational programmes to the various segments of the nearby community. Dr. S.C. Bhatia, Hon. Secretary, Indian University Association for Continuing Education, in his statement on objectives of the workshop pointed out that the constraints inherent in the formal system of education can be overcome through the popularization of a community college movement within our existing colleges. He urged upon the participating Principals to undertake systematic assessment of educational needs of the community. Dr. P.K. Bhattacharya, Director of the Vikram University, welcomed the participants to a meaningful stay in Ujjain and offered every possible help in the work.

The following recommendations were made at the workshop:

(1) The Ministry of Education in Govt. of India should support a national workshop on staff development programmes in universities as part of the Continuing Education Programmes.

(2) The University Grants Commission should consider including the scheme of faculty improvement programmes as part of the staff development programmes for each university within the framework of continuing education programmes.

(3) The University Grants Commission should consider supporting a few regional workshops on continuing education through colleges with a view to promoting involvement of a larger number of colleges in such programmes.

(4) The universities in their turn should organize college principals orientation meetings with the purpose of facilitating involvement of larger number of colleges in these programmes.

(5) The University Grants Commission should consider supporting a National Master Trainers' Training Workshop for involvement of universities/colleges in continuing education programmes.

(6) The Indian University Association for Continuing Education should prepare a Handbook on management of continuing education programmes through universities/colleges.

Workshop on regional and urban planning at JNU

The Centre for the Study of Regional Development of the Jawaharlal Nehru University organised a National Workshop in research methods on Regional and Urban Planning recently. The workshop was sponsored by the University Grants Commission.

At the valedictory session the JNU Vice-Chancellor, Prof. P.N. Srivastava highlighted the need for more research in order to resolve the chronic problems of regional imbalances, under-development and urban sprawl. He said that systematic research in these areas will be the first necessary step towards the discovery of viable solutions for such problems.

Directed by Prof. Aijazuddin Ahmad, the workshop was designed to expose geography teachers and researchers in Indian universities and colleges to new developments in content and research methodology in the area of urban and regional planning. Eighteen participants from all over the country were addressed by eminent scholars in the field of regional planning and urban development who shared with their research experiences. The resource persons included Professors Satyesh Chakraborty (Calcutta), Moonis Raza (JNU), P.K. Muttegi (Bombay), Manzoor Alam (Srinagar) and G.S. Bhalla (Chairman, Agricultural Prices Commission).

The participants were required to develop a research proposal as an outcome of the workshop. This called for intensive reading and consultations with the faculty in order to conceptualize and evolve suitable methodological framework for the proposed research work. They were given an intensive grounding in the use of quantitative methods of regional analysis.

New Education Policy

Replying to the debates in the Lok Sabha on the demands for grants of the Ministry of Education, the Union Minister for Education, Shri K.C. Pant, announced on April 8, 1985 that the Central Govt. had set 1986-87 as the target date for implementing the new Education Policy. While listing some of the important areas of the new Education Policy, Shri Pant mentioned universalisation of elementary education, non-formal education, adult education, open schools and model school concept.

The Minister further said that as a first step for the formulation of education policy a status paper on the state of education in the country was being prepared. As the second step this status paper when ready would be examined in consultation with the State Governments and any changes that needed to be made would be incorporated. The third step would involve preparation of the recommendations. These recommendations will have an inbuilt mechanism for their implementation.

Alagappa University Bill introduced

A new university named 'Alagappa University' is proposed to be set up at Karaikudi in Tamil Nadu.

A Bill which provides for the government take over of the educational institutions of Dr. Alagappa Chettiar Educational Trust at Karaikudi to establish a university there, was introduced in the Tamil Nadu Assembly on April 8, 1985 by Mr. C. Aranganayakam, Education Minister of the State.

Assam College Bill passed

The State Assembly of Assam passed on April 9, 1985 a Bill titled "The Assam College (taking over of management and control) Bill 1985". The basic aim of the bill is to improve the standard of education in the State. The Bill provides that from the date of taking over by the State the Governing Body of the college shall stand dissolved and the administration, managment and control of the college shall vest in the State Government. Further the statement of objects and reasons of the Bill says: "Of the total degree colleges in the State a large number of them are covered under the deficit grant-in-aid scheme. It appears however that in most of the colleges there is no proper management and control of the college affairs. Thus again, there is no unity in the control and management of these colleges. This has resulted in deterioration of the academic atmosphere."

According to the Education Minister of Assam, there were in all 119 non-government deficit colleges in the State and all of them would be taken over in a phased manner. He further announced that a government college would be opened in each district and sub-division.

Floating Varsity in Bombay Port

S.S. Universe, floating university offering the "Semester at Sea" programme of the University of Pittsburg's Institute of Ship Board Education which is on its 100-day round the world voyage berthed at Bombay port on March 30, 1985. Some 385 undergraduate students, mostly from US universities, are enrolled for the semester.

The ship has 17 members on its teaching faculty. The courses are focussed on the international dimension of major liberal arts disciplines, Anthropology, Sociology, History, Geography, Political Science, Philosophy, Religion and Art.

It is reported that so far over 15000 young American students have been benefited from the educational opportunities provided by the floating university.

The students have paid between $8845 and $9575 for these courses depending on the type of accommodation desired.

New Chairman of IIT, Kanpur

The President of India in his capacity as Visitor of the Indian Institute of Technology, Kanpur, has nominated Dr. A.S. Ganguly, Chairman, Hindustan Lever Ltd. as the Chairman of the Board of Governors of the IIT, Kanpur for a period of 3 years with effect from March 18, 1985.

New Universities

The Union Minister for Education, Shri K.C. Pant, announced in the Lok Sabha that a Bill for setting up the National Open University is likely to be introduced during the current session of the Parliament.

Another Bill for setting up a Central University in Pondicherry is also likely to be introduced during the current session of the Parliament.

The Union Minister for Agriculture & Rural Development, Shri Buta Singh, also announced in the Lok Sabha that the Government does not have any plans to set up further agricultural universities in the States during the Seventh Plan period except considering the establishment of a Central Agricultural University in the North-Eastern Hill Region.

More colleges under Nagarjuna Varsity to start PG courses

The Academic Council of Nagarjuna University at its meeting held on 28th March, 1985 accorded permission to start postgraduate courses in Mass Communication in the Montessori Mahila Kalasala in Vijayawada; in Telugu in the Hindu College, Guntur and S.S.R. College, Vijayawada; in Phlosophy in the A.C. College, Guntur; in Social Work in the Loyola College, Vijayawada; and in Commerce in the A.B.M. College, Vijayawada.

The Academic Council also decided to introduce the semester system in Engineering Colleges from the next academic year. It granted affiliation to Engineering Colleges at Guntur and Chilakaluripeta.

Seminar on ayurvedic drugs at SNDT

The S.N.D.T. Women's University's C.U. Shah College of Pharmacy organised a seminar on Ayurvedic drugs at its campus at Juhu, Bombay, some time ago. Dr. K.M. Parikh, Managing Director, Zandu Pharmaceuticals Ltd., the chief guest, presented a paper on 'Importance of Ayurvedic drugs'. The seminar in its five sessions, discussed the problems of :

(i) Present utilisation of Ayurvedic vegetable drugs by industry; (ii) Cultivation, collection and identification; (iii) Isolation and characterisation of active constituents of indigenous vegetable drugs; (iv) Formulation; and (v) Standardization of ayurvedic formulations.

HAU Academic Council's decisions

The Academic Council of the Haryana Agricultural University, during several of its recent meetings, took the following important decisions:

(1) A certificate course in Russian was approved.

(2) Local mileage for participation in various cultural and sports activities beyond 1.5 km was approved.

(3) Rates for refreshment charges for participation in co-curricular activities have been revised.

(4) Rules for award of grace marks to the students of College of Sports in annual examination were approved.

(5) In order to explore the employment potentials for our graduates in public and private sectors based on future employment potential, a committee comprising 4-5 senior faculty members was constituted to look into number of students to be admitted in various programmes. This will also help to evolve a system of perspective planning at the University necessary in the interest of manpower development.

Sri Padmavati Mahila University to have new buildings

The Executive Council of Sri Padmavati Mahila University which met at Tirupati on 27th March, 1985 decidd to construct new buildings for accommodation at a cost of Rs. 2 crores. These new buildings will be constructed in the area of 130 acres donated by the Tirumala-Tirupati Devasthanam at its dairy farm.

It was also decided to introduce postgraduate courses in Journalism and other subjects with effect from the academic year 1985-86.

CALENDAR OF EVENTS

Proposed Dates of the Event	Title	Objective	Name of the Organising Department	Name of the Organising Secretary/Officer to be contacted
November, 28-29 1985	**International Conference on New Technologies in Higher Education**	**To assess the possibilities of the now available new technologies in the background of the broad social and cultural context and the state and trends of Higher Education in India and other developing countries**	**Association of Indian Universities, IIT/Delhi, JNU, Jamia Millia and University of Delhi**	**Prof. Tapas Mazumdar (JNU), Prof. S. Shukla (Jamia Millia), Prof. L.R. Shah (JNU)**
July 8-19, 1985	Short term intensive training programme on Abstracting & Indexing	To cover all basic principles, developments and perspectives in abstracting and indexing traditions to computerised retrieval systems	National Institute of Small Industry Extension Training, Yousufguda, Hyderabad	Mrs. K. Subhashini, Course Director
December 12-14, 1985	Asia Pacific Symposium on Wind Engineering	Nature of wind and effect on structures and study of damage and its socio economic implications	Civil Engg. Department, University of Roorkee, Roorkee	Dr. S. K. Pathak, Organising Secretary
December 16-18, 1985	Indian Geotechnical Conference	To advance the state of knowledge about the geotechnical engineering and to give definite direction to the future research work	Earthquake Engg. Department, University of Roorkee, Roorkee	Dr. V. H. Joshi, Organising Secretary

Personal promotion for teachers to be half-yearly at HAU

The Board of Management of Haryana Agricultural University in its 99th meeting decided that the assessment of the teachers for personal promotion will be done half-yearly instead of yearly as at present and applications for this purpose shall be invited twice in a year i.e. by 30th June and 31st Dec.

The upper limit of age in respect of personal promotion for non-Ph.Ds has also been reduced from 55 to 45 years.

News from Agril. Varsities

Seminar on fisheries training for rural development at Pantnagar

A two-day national seminar on "Fisheries Training for Rural Development" was organised on 10th and 11th April at the G.B. Pant University of Agriculture & Technology. The seminar was organised to give a new out-look to the present shape of fisheries training as also devise strategies for strengthening it to provide benefit to a large number of fish farmers.

Inaugurating this seminar, held in the Silver Jubilee year of the University, the Vice-Chancellor, Sri Kripa Narain called for a concerted efforts to increase the per unit area of fish production in the country through the management, conservation and development of large waters as also bringing culturable and reclamable waters under intensive fish culture. He also emphasised for locating unventured fish spawning grounds and use of latest techniques of Bundh and induced fish breeding to meet out the growing demands of fish seeds.

Referring to the great potential of fish production in Uttar Pradesh in view of its vast inland water resources comprising 7.2 lakhs ha. of rivers, streams and canals, 2.83 lakhs/ha. of reservoirs and lakes and 1.62 lakhs ha. of small water bodies, he hoped that by exploiting these resources it would be possible to generate considerable employment and revenue, leading to a sizeable increase in the income of the socially backward and economically weaker sections.

Underlining the need for scientific training in fish farming, he informed that a Fisheries Research & Training Centre has since been established in the University aiming at giving proper training to the fisheries extension workers of the State. These trained workers in turn would transfer the technical know-how of fish farming and seed production to the farmers in that area. He also informed that for the first time in the northern State of the country, a three-year degree course in Bachelor of Fisheries Science will be started in the University from the next academic session.

The chief guest, Padmshri Dr. B.G. Jhingran, in his keenote address summed up the history of fisheries development in the country and said that there is discernible at the present time a global upsurge for aquaculture which made itself first felt in 1972. He further said that a major breakthrough in fresh water aquaculture came in the year 1957 when the Indian major corps were bred in captivity by the administration of fish pituitary hormone. This was followed by induced breeding of Chinese silver carps and grass carps and adoptation of techniques of nursery pend management. The evolution of composite fish culture and the application of the principles of ecological niche are path breaking techniques. He also called for a multi-disciplinary systems-oriented research work in aquaculture.

Bee-keeping seminar-cum-refresher course at PAU

Inaugurating the Fourth Bee-keeping Seminar-cum-Refresher Course at the Punjab Agricultural University on April 6, Shri P.H. Vaishnav, Financial Commissioner (Development), Punjab said that production of foodgrains in Punjab had reached a stage where the price offered for it had become less profitable for the farmers. He said that Punjab had produced 70 lakhs tonnes of paddy during 1984 as against 56 lakh tonnes in 1983. This increase was possible by using 12-14 per cent more of chemical fertilizer than the previous year. Shri Vaishnav opined that since other states like U.P., Madhya Pradesh, Bihar, Orrisa were fast coming-up with wheat production there would be less buyers of Punjab wheat in future. He, therefore, advised the farmers to adopt other professions like bee-keeping and dairy farming. He said that he was aware of the marketing problem of honey and would try to solve them.

Dr Sukhdev Singh, Vice-Chancellor of the PAU in his presidential address said that bee-keepers of the State were facing problem of marketing their produce. He suggested that honey should also be sold through the counters of Milkfed located all over the state. The Vice-Chancellor desired that awareness among people about the excellent food value of honey should be created. The Vice-Chancellor urged the State Government to provide loan facilities to the small industries associated with bee-keeping.

Dr. A.S. Atwal, Director of Ecology and Plant Protection said that proper management was a key to successful bee-keeping. He urged the bee-keepers to study the latest literature on bee-keeping. Dr Atwal told that the work on the breeding of honey bees was being taken-up at the University.

Dr. B.S. Chahal, Professor of Entomology said that there were

3,000 bee-keepers in the State having 30,000 colonies. He told that 200 tonnes of honey was produced during the last year and a yield of 350 tonnes of honey was expected this year.

Training course for the officers of soil testing laboratories at BKVV

A refresher training course of two weeks' duration for the officers of soil testing laboratories of the four Eastern region States of India was held in Bidhan Chandra Krishi Viswavidyalaya, West Bengal from 18th February to 2nd March, 1985 at the initiation of the Ministry of Agriculture, Govt. of India. The training course was organised jointly by the Dept. of Agricultural Chemistry and Soil Science and the Field Extension Wing of the Viswavidyalaya. In all 17 trainees—5 from Bihar, 3 from Orissa, 2 from Sikkim and 7 from West Bengal participated in the training programme. The training programme was inaugurated and on completion of the training, certificates were distributed among the participating trainees by the Vice-Chancellor of the Viswavidyalaya.

ICAR to spend Rs. 1000 crores on research

The Indian Council of Agricultural Research, it is reported, has proposed to spend Rs. 1000 crores on research and agricultural activities in the Seventh Plan as against Rs. 320 crores in the Sixth Plan.

At present there are 40 research institutes in the country besides 70 All-India Coordinated projects supported by 80 centres with 500 ad-hoc schemes.

The ICAR is contemplating to set up more national research centres in various parts of the country on Horticulture.

Sports News

Combined Universities Volleyball Team Federation Cup Champions

The Combined Universities Volleyball Team earned a rare distinction by winning the 7th Federation Cup Volleyball Championship concluded at Tirunelveli on April 14, 1985. Only 10 top teams in the country, viz. Railways, Rajasthan, Uttar Pradesh, West Bengal, Punjab, Haryana, Services, Kerala, Tamilnadu and Combined Universities XI were invited to participate in this tournament. The teams were divided into 2 zones—'A' and 'B'.

The zone matches were played on league basis. 2 teams qualified from each zone for the super-league. The Combined Universities team qualified for the super-league after defeating Rajasthan, Uttar Pradesh and West Bengal in Zone 'A'. They won the championship by defeating Railways, Kerala and Tamil Nadu in the super-league.

The level of performance in the Federation Volleyball Cup Tournament is better than that of National Volleyball Championship because in the Federation Cup only selected teams based upon there high level performance are invited. By winning the Federation Cup, Combined Universities team has outclassed all the outstanding teams in the country.

Earlier they won the Inter Institutional Championship conducted at Madras from 17.3.85 to 23.3.85. By winning these 2 national level tournament consecutively the combined universities volleyball team have confirmed their supermacy in the country.

Kendriya Lok Nirman Vishwakarma Puraskar

Government of India, Directorate-General of Works have introduced a scheme for awarding prizes for original books in Hindi on Engineering Subjects, concerning C.P.W.D. for one year i.e. from 1.1.1985 to 31.12.85. Prizes: Following three prizes will be awarded under this Scheme:

1. First Prize —Rs. 5000/-
2. Second Prize—Rs. 3000/-
3. Third Prize—Rs. 2000/-

Selection of books for award of prizes would be made by the Director-General of Works on the recommendations of a Sub-Committee constituted for this purpose: **Eligibility**: All the officers of C.P.W.D. can participate in this Scheme. The books written by the Retired Officers of the Department would also be considered.

Guidelines : (i) Book should be Standard one (ii) Book should be of technical use of the Department (iii) Author should not write the book simply by translating standing orders of the Department (iv) Views of the author should be practically proved. Date of sending Books : Authors may send four typed or printed copies of their books within one month after **31.12.1985** or earlier to the Director-General of Works, C.P.W.D., Nirman Bhavan, Maulana Azad Road, New Delhi-110011. Other information should be given in the following manner : 1. Name of Author. 2. Designation/Designation at the time of retirement 3. Full address (Office or residence) 4. Name of book 5. Signature 6. A Certificate to the effect that the book has been written by him. Detailed information may be had from Executive Engineer (Hindi), C.P.W.D., (Phone No. 389318). davp 635 (14) 85

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1985-86

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M.Sc. DEGREE	**in CHEMISTRY/ MATHEMATICS/ PHYSICS** by course work of 2 years duration consisting of four semesters.
RESEARCH PROGRAMMES	**Ph.D.** Minimum 24 months for a full-time candidate with Master's degree and 36 months for a candidate with Bachelor's degree. **M.S.** 18 months for a full-time candidate.

Aeronautical Engineering

Aerodynamics; Aerospace Propulation, Aircraft Structures; Aircraft Design.

Applied Mechanics

Structural Mechanics and Experimental Stress Analysis; Fluid Mechanics and Wind Energy Systems; Biomechanics and Biomedical Engineering; Machine Dynamics and Vibration and Noise Engineering; Lubrication Mechanics and Industrial Tribology; Condition Monitoring and Maintenance Engineering and Management.

Chemical Engineering

Catalysts and Reactors; High Polymer Engineering (including Composite Materials and Structures); Particle Technology including Mineral Processing; Instrumentation and Process Control; Computer Aided Process Synthesis and Equipment Design; Environmental Engineering; Biochemical Engineering.

Civil Enginerring :

Building Technology; Geotechnical Engineering; Hydraulic and Water Resources Engineering; Structural Engineering; Transportation Engineering.

Computer Science & Engineering

Analysis of Algorithms; Computational Complexity; Computer Architecture; Data Base Systems; Distributed Computing; Digital Signal Processing; Modelling and Simulation, Artificial Intelligence; Expert Systems; Information Systems, CAD for VLSI; VLSI Algorithms; Local Area Network; Software Engineering.

Electrical Engineering :

Analog and Digital Filters, Communication Systems; Digital Techniques; Electro-magnetic Theory and Wave Propagation, Surface Acoustic Wave Devices, Electromagnetic Compatibility; Digital Signal Processing; Laser Communication; Microwave Engineering, Television Engineering, Image Signal Processing and Fibre Optic Communication, Semiconductor Devices and LSI Technology; Control Systems and Guidance; Measurement and Instrumentation; Networks and Systems; Power Electronics; Electrical Mechines and Drives; High Voltage Engineering; Power System Operation and Control; Computer Aided Analysis of Power Systems.

Mechanical Engineering

Combustion and Propulsion; Internal Combustion Engines and Gas Turbines; Heat Transfer and Thermal Power; Thermal Turbomachines; Refrigeration and Air-conditioning; Hydroturbomachines—Mini & Micro hydel sets—Cavitation in Pumps—Ducted Propellers—Jet Pumps; Solar Energy; Cryogenic Engineering, Production Engineering; Mechine Tools; Metrology; Machine Design; Machine Elements; Mechanisms; Friction and Wear; Fatigue Design: Mechanical Handling; Instrumentation and Control; Precision Engineering, Sintered Bearings; Microprocessor Based System design; Oil Hydraulic and Pneumatic Systems; Robotics.

Metallurgical Engineering

Metal Joining, Metal Casting, Metal Forming, Materials Technology, Physical Metallurgy, Iron and Steel Technology, Structural Metallurgy, Mechanical Metallurgy, Powder Metallurgy, Thermodynamics Metallurgical Systems; Hot Corrosion, Creep, Fatigue and Frecture Mechanics.

Ocean Engineering Centre

Marine Geotechnical Engineering; Materials for Marine Environment; Ocean Hydrodynamics and Dynamics of Floating Bodies; Ocean Structure, Ocean Energy.

Centre for Systems and Devices

Acoustical and Rader Imaging; Applied Electromagnetics and Antennas; Digital Signal Processing; Semi Conductor Devices.

Minimum Qualification for Admission

M.Sc. A First Class or 60% marks or equivalent in the Bachelor's Degree in Science (Chemistry, Mathematics, Physics). For the Department of Chemistry, only candidates with B.Sc. Chemistry main and Mathematics and Physics ancillaries or as additional mains are eligible. No other ancillaries are eligible. For the Department of Mathematics only those candidates with Mathematics as major are eligible to apply. For the Department of Physics candidates with Bachelor's Degree in Physics with Mathematics as one of the ancillary subjects are eligible to apply.

Those appearing for their qualifying examinations are also eligible to apply provided they are completing all their qualifying examinations not later than 1st August 1985. Candidates will have to come to Indian Institute of Technology, Madras **at their own cost** for a departmental written test followed by an interview.

M.S. : All applicants for full-time M.S. programme, should possess a Bachelor's degree in Engineering/Technology or equivalent or Master's Degree in Science (Mathematics, Physics, Statistics, Applied Science, Material Science and Chemistry for certain areas) with a First Class or with a minimum of 60% marks in the aggregate in the qualifying degree examination in the prescribed discipline and *should have successfully completed the Graduate Aptitude Test in Engineering (GATE)*. For certain areas in Civil Engineering, Bachelor's degree holders in Aeronautical Engineering/Agricultural Engineering or Master's degree holders in Applied Mathematics/Applied Sociology/Geo-Physics with a first class or 60% marks in the aggregate are also considered. In addition, science graduates should possess two years experience in Civil Engineering area. AMIE candidates are not eligible to apply for M.S. Research Programme.

Ph.D. : Candidates should possess a First Class or a minimum of 60% of marks in the aggregate or equivalent in the qualifying degree examination in the prescribed discipline as indicated below :

Master's Degree in Engineering/Technology or equivalent for the Engineering Departments. For the Department of Aeronautical Engineering candidates with a Master's degree in Mathematics/Physics are also eligible to apply. For certain areas in Civil Engineering, Master's degree holders in Engineering Mechanics/Aeronautical Engineering/Architecture/Town and Country Planning/M.B.A. after obtaining basic degree in Civil Engineering with a First Class or 60% marks in the aggregate are also considered. Candidates who have qualified for the award of the Bachelor's degree in Engineering/Technology with exceptionally good academic background in the prescribed discipline and who have successfully completed the Graduate Aptitude Test in Engineering are also eligible to apply subject to the following conditions :

(1) If the candidate happens to be a B.Tech. degree holder of an IIT or B.E. degree holder of the I.I.Sc., Bangalore, he should be in the top 25% of the class.

(2) In the case of Bachelor's degree holder from a University, he should be among the top 10 rank holders in the University.

(3) The candidate should be eligible for admission to the M.Tech. programme in the particular stream by virtue of his GATE score.

Note : Candidates who are likely to complete their M.E./M.Tech. (1½ *years) Courses by December* 1985 *may also apply against this advertisement and submit their applications within the prescribed dates in this advertisement. They will be called for interview/test sometime in December* '85.

Concession to Candidates Belonging to Scheduled Caste/Tribe

(a) 15% for SC and 7½% for ST are reserved with provision for interchange of the percentages.

(b) Relaxation upto 5% in the qualifying examination marks.

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M.Sc. : On the basis of performance at the end of the I semester 25% of the students admitted will be awarded merit scholarship of Rs. 170 p.m. and exempted from payment of tuition fees. In addition, another 10% of M.Sc. students are exempted from payment of tuition fees.

All SC/ST students of M.Sc. who satisfy the means criteria as per the Government of India Postmatric Scholarship rules will be eligible for free messing (Basic menu only) plus out of pocket allowance of Rs. 70 p.m. Day Scholars are eligible for scholarship of Rs. 185 p.m. (inclusive of State Government Scholarship, if any). In addition, all SC/ST students are exempted from payment of tuition fees and hostel seat rent.

M.S./Ph.D. : Students admitted to the Research Programmes will be eligible for scholarships as per rules.

Candidates called for interview for full-time Ph.D. programme will be paid second class to and fro train fare from their place of residence to the Institute by the shortest route.

External Registration (M.S./Ph.D.)

Facilities are available for persons working in scientific laboratories/Industries with R & D facilities/R & D establishments to work for M.S. and Ph.D. in Engineering Departments. The candidate must possess the minimum academic qualifications prescribed for the full time candidates and also a minimum of two years of continuous service in these organisations in research/design/development areas. Candidates not possessing first class or 60% marks but possessing outstanding R & D experience (measured in terms of research publications in standard journals and patents taken) may also be considered for admission subject to their satisfying the prescribed conditions. Such candidates have also to appear for a departmental qualifying examination. The candidates must be sponsored by their organisation with an undertaking that the organisation will provide all facilities to the employees to pursue research. The candidates, if selected, should take leave and relief from the employer for the prescribed residence period. No scholarship will be paid for external registration candidates. NO T.A. WILL BE PAID FOR THESE CANDIDATES ATTENDING INTERVIEWS. Faculty members from Universities/ Colleges are not eligible to apply under this scheme.

General

Application form and information regarding courses/programmes can be obtained by candidates on requisition mentioning clearly the course/ programme/department for which they are applying and by sending (i) a Bank Draft for Rs. 12 in favour of Indian Institute of Technology, Madras, payable at Madras and (ii) a self-addressed unstamped envelope (27 cm × 12 cm) to :

The Deputy Registrar (Academic)
Indian Institute of Technology
Madras-600 036

The Demand Draft should not have been dated earlier than **10th April 1985**. The cover addressed to the Deputy Registrar (Academic) should be superscribed as "ADMISSIONS 1985-86—M.Sc. Chemistry/Mathematics/Physics, as the case may be for M.Sc. courses and "ADMISSIONS—1985-86—MS/PhD" for Research Programmes on the left hand corner of the cover. A candidate proposing to apply for more than one department/programme should request for additional application forms for which a fee of Rs. 12 for each additional application form should be included in the Bank Draft. Those who apply for **External Registration** should indicate the same clearly in their requisition.

Last date for Receipt of Requisitions for Application by Post		**10th May 1985 (Friday)**
Last Date for Receipt of Completed Applications		**24th May 1985 (Friday)**
Probable dates for Interview/ Test	M.Sc.	**27th June 1985 (Thursday)** **28th June 1985 (Friday)** **29th June 1985 (Saturday)**
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Doctoral Degrees awarded during the preceding month are reported as 'Theses of the Month' while registrations made for such degrees are flashed as 'Research in Progress'. Bibliographies are also compiled and supplied on demand.

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THESES OF THE MONTH

A list of Doctoral Theses Accepted by Indian Universities

BIOLOGICAL SCIENCES

Anthropology

1. Raj Kamal. *Discrete nonmetric and metric morphological variation of the human skull: A study based on six skeletal population samples of India*. Pb U, Chandigarh.

Biology

1. Venugopal Rao, V. *Genetic effects of inbreeding in population groups under different socio-cultural environments*. OU, Hyderabad.

Biochemistry

1. Abdul Kareem, M. *Cellular and membrane lipid changes and related studies in rat atherosclerosis controlled by Anna pavala Sindhooram*. U Madras.
2. Abedini, Sedigeh. *Mycotoxicoses: Biochemical studies on the toxins produced by Penicillium crustosum*. U Madras.
3. Dasgupta, Medhumita. *Studies on motabolic mechanism in iron oxidizing thiobacillus ferroxidenes*. U Calcutta.
4. Dhandapani, K. *Phospholipid and related changes in rat atherosclerosis controlled by Anna pavala Sindhooram*. U Madras.
5. Kharat, Indira Bibhishan. *In vitro cultivation studies with filarial parasite*. Nagpur U.
6. Sreenivasulu, S. *Purification, immobilization and characterization of an alkaline proteinase and its application in feed industry*. U Madras.
7. Suresh Chandra, B.R. *Effect of denaturants on vegetable proteins*. U Mysore.
8. Veeraragavan, K. *Effect of 5-thio-d-glucose on metabolism and tissue function with special reference to tests*. U Madras.

Microbiology

1. Ganesan, K. *Studies on transformation mediated by isolated mitochondria and mitochondrial DNA in yeast, saccharomyces cerevisiae*. JNU, Delhi.
2. Pati, Durga Prasad. *Studies on soil microbial population and soil metabolism of some tropical grasslands of Orissa, India*. Sambalpur U.
3. Qazi, Ghulam Nabi. *Microbial production of citric acid from n-paraffins*. MSU, Baroda.

Marine Biology

1. Sankaranaryana Ayyar, S. *Studies on spharoma species of Kerala backwaters*. U Ker, Trivandrum.

Botany

1. Acharya, Ramesh Madhaorao. *Flora of Wardha District*. Nagpur U.
2. Aniel Kumar, Owk. *Cytogenetical and palynological studies in the genus Capsicum L*. Andhra U, Waltair.
3. Annapurna,Bhamidipaty.*A contribution to the cytology of a few Ceramiales (Rhodophyta)*. Andhra U, Waltair.
4. Barde, Anant Kumar. *Studies on human fungal infection of skin and nails with special reference to non dermatophytes at Balaghat, M.P.* RDV, Jabalpur.
5. Barman, Tarun Sen. *Physiological studies on germination of seeds and seeding growth of tea, Camollia sinensis (L) O : Kuntzo*. Gauhati U.
6. Bhamrah, Kulwant Singh. *Seed-borne diseases and aflatoxin contamination of maize grown by tribals in Rajasthan*. U Raj, Jaipur.
7. Bhavani, I.L.G. *Assimilation of ammonia and synthesis of ureides in root nodules of field bean. Lab Lab purpureus L. Sweet*. U Madras.
8. Bhuvanendran Nair, D. *Morphactin regulated growth and development in garlic and onion*. SPU, Vallabh Vidyanagar.
9. Chattopadhyay, Suchitra. *Interspecific and clonal variations in species of Agave and Costus in relation to the structure and behaviour of chromosomes*. U Calcutta.

10. Chinchanikar, Ganesh S. *Studies on tissue cultures from floral organs of some solanaceous plants.* U Poona.

11. Dhakar, Raj Karan Singh. *Studies on histopathology and histochemistry of root galls incited by meloidogyne incognito in Citrullus vulgeris Schrad.* URaj, Jaipur.

12. Dhake, Babu A. *Studies on the embryology of some species of Erythria Linn and flora.* U Poona.

13. Dudhwewale, Beena. *Studies on morphology, cytology and diosgenin species.* U Calcutta.

14. Govindarajan, G. *Studies on the biology of Pseudomonas solanacearum E.F. Smith, the incitant of the bacterial wilt of banana.* U Madras.

15. Grover, Sharda. *Primary and secondary products from medicinal plants of Rajasthan growing in vivo and in vitro tissue cultures.* U Raj, Jaipur.

16. Gupta, Madhulika. *Studies in reproduction biology of Vicia faba L.* Meerut U.

17. Hajra, Bijay Kumar. *Studies on cellulase activity of thermophilic actinomycetes.* U Calcutta.

18. Joshirao, Jyoti Ashok. *Palynological investigations in some alkaloid bearing plants.* Nagpur U.

19. Karnik, Chintaman R. *Some studies on Indian medicinal plants used in Ayurvedic system of medicine.* U Poona.

20. Mallaiah, B. *Experimental mutagenesis in momardica charantia L.* OU, Hyderabad.

21. Mohindra, Poonam. *Microbial ecology of phylloplane of Crotalaria juncea and Triticum aestivum in relation to air pollutants.* U Delhi.

22. Mukhopadhyay, Arundhati. *Tissue culture studies in legumes.* U Delhi.

23. Nageswara Rao, Y. *Analysis of structure and functions of a grazing land ecosystem and of some cropland ecosystems situated in arid to semiarid ecoclimate, and an evaluation of the human activities thereon.* Saur U, Rajkot.

24. Pitchi Reddy, Maddula. *Cytogenetical and mutational studies in some wild species of genus Oryza.* Andhra U, Waltair.

25. Ponnuraj, T. *Studies on symbiotic nitrogen fixation in detached and rooted leaves of Lablab purpureus L. Sweet.* U Madras.

26. Ranade, Sujata. *The assessment of naturally occurring substances as plant growth regulators.* U Poona.

27. Rani, N. *Taxonomic studies on the flora of the Tamil Nadu Carnatic.* U Madras.

28. Ray, Prantosh. *Taxonomy of cultivated plants in Tripura State, India.* U Calcutta.

29. Ray, Sephali. *Studies on microbiological deterioration of frozen exportable protein food—frog legs, shrimps and crab meat.* U Calcutta.

30. Sandhya Rani, C.K. *Physiological studies on dormant and non-dormant seeds of groundnut, Arachis hypogaea L. varieties during after ripening and germination.* SVU, Tirupati.

31. Santosh Kumari. *Cytomorphological observations on some Indian members of family leguminosae (Sensulato).* Pbi U, Patiala.

32. Sarma, Rabindra Nath. *Studies on the effect of certain growth regulators on the extension growth of epicotyl of gram, Cicer arietinum L.* Gauhati U.

33. Sen, Kunal. *Studies on polyamines in rice seeds, Oryza sativa L., in relation to their regulatory roles on the activities of some important enzymes.* U Calcutta.

34. Shekhar, Navdeep. *Cytotaxonomic studies in some Indian orchids.* Pb U, Chandigarh.

35. Singh, Arti. *Study of nitrogen budget in grassland of Ujjain with special reference to grass legume, Iscilemaindigofera asso.* Vikram U, Ujjain.

36. Singh, Shivadhar. *Physiology of tolerance of rice plant under water logged situations.* Utkal U, Bhubaneswar.

37. Sivasamy, S. Narender. *Effect of tanliquor and tannins on microorganisms.* U Madras.

38. Sood, Anil. *In vitro seed germination, clonal propagation and cytological studies in some indigenous orchid taxa of ornamental value.* Pb U, Chandigarh.

39. Tyagi, Shobha. *Studies on purple blotch and black mold rot of onion.* Meerut U.

40. Venkateswara Rao, Kolli. *Physiological and biochemical studies on the effect of potassium nutrition on pigeonpea. Cajanus cajan (L) Millsp.* Andhra U, Waltair.

Zoology

1. Aggarwal, Renu. *Some biochemical observations in relation to the process of morphogenesis in Athalia lugens proxima (Klug) (Hymenoptera: Tenthredinidae).* Pbi U,Patiala.

2. Ahmed, Jamaluddin. *Studies on the chromosomes of decapod crustaceans of the Chilka Lake.* Utkal U, Bhubaneswar.

3. Balbir Singh. *Morpho-taxonomy and zoogeography of Indian tenthredinidae (Hymenoptera: Sympathyta: Tenthredinidae) alongwith the external morphology of Pachyprotasis albicincta Cam.* Pbi U, Patiala.

4. Banerjee, Shibani. *Sex-cycle of the mouse tailed bat Rhinopoma Hardwickei Hardwickei (Gray).* Nagpur U.

5. Bharathi, D. *Studies on effect of carbaryl on the metabolic activities of blister beetle, Mylabris pustulata Thunb.* SVU, Tirupati.

6. Chaudhary, Surekha. *Studies on cestodes of birds.* Meerut U.

7. Daniel, A. Mohan. *Bioecological studies on some thrips, Thysanoptera: Insecta infesting weeds in cultivated fields.* U Madras.

8. Deshmukh, Vilas Govindrao. *Studies on biopolymers of hydroxy acids.* Nagpur U.

9. Dhar, Sushma. *Thymus and bursa of fabricius as factors involved in chemical carcinogenesis using chick embryo model.* Pb U, Chandigarh.

10. Dhore, Bhaskar Pundlikrao. *Experimental studies on the anterior pituitary and other endocrine glands of the Indian vampire bat, Megaderma Iyra Iyra Geoffrey.* Nagpur U.

11. Dravidamani, S. *Studies on experimental brain tumours in wistor ablino rat, Rattus norvegius.* U Madras.

12. Ghosh, Ranjit Kumar. *Effect of thyroid hormone on brain of fish.* U Calcutta.

13. Gnanasekaran, N.C. *The effect of linoleate deficiency on the development and maturation of brain with particular reference to synaptosomal structure-function relationship in mice, Mus musculus.* U Madras.

14. Ismail, Sultan Ahmed. *Taxonomical and bioecological studies on some earthworms from Madras.* U Madras.

15. Joshi, Suresh Chandra. *Hypolipidaemic activity Aloe barbedensis Mill in male rat with special reference to lipid metabolism affecting reproduction.* U Raj, Jaipur.

16. Kameswara Rao, Kotamraju. *Ecology and management of some wild ungulates in Marripakaly forests of Eastern Ghats.* Andhra U, Waltair.

17. Kapadiya, M. Priyadarshini. *Qualitative and quantitative studies of the nematode community structure and their fluctuation patterns in certain cash crops in and around the city of Hyderabad, Andhra Pradesh.* OU, Hyderabad.

18. Kaushik Chandra Prakash. *DDT and HCH residues in atmosphere, their fate in soil and impact on soil microfauna in Delhi.* U Delhi.

19. Khanuja, Amarjeet Kaur. *The biochemical aspects of ageing in Dysdercus, Hemiptera,* HS Gour, Sagar.

20. Kondal, Jasjit Kaur. *Effect of vegetable oil factory effluents on the liver, blood serum and gonads of the freshwater teleost, Heteropneustes fossilies Block : A biochemical and histochemical study.* PAU, Ludhiana.

21. Lahon, Bhupen. *Limnology and fisheries of some commercial beels of Assam, India.* Gauhati U.

22. Maddi, Priyadarshini P. *Studies in the silkworm, Bombyx mori L · Some aspect of neurochemistry and nutagenesis.* Bangalore U.

23. Mandhana, Jugal Kishore. *The reproductive cycle and a resonal study of pituitary-gonand relationship in the spiny-tailed lizard Uromasty herdwickie Gray.* U Raj, Jaipur.

24. Mohammad Fazil. *Embryology of the rat tailed bat,*

Rhinopoma hardwickei Hardwickei Gray. Nagpur U.

25. Mohamed Yacoob, M.H.S. *Biology of the effs of the Tingidae (Heteroptera) of Southern India*. U Madras.

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31. Rajagopalan, Chandra. *Bio-ecological studies on soil microarthropods with special reference to Squtigerella Sp. and Lepidocyrtus Sp*. U Madras.

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Medical Sciences

1. Ashok Kumar. *Studies on pharmacological characterization of purinoceptors and their role in the action of some drugs*. Pb U, Chandigarh.

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15. Vyas, Suresh Prasad. *Studies on release pattern and stability of some drugs with polymers*. HS Gour, Sagar.

Agriculture

1. Bansal, Subhash Chander. *Role of calcium in post-harvest physiochemistry of Kinnow fruit*. PAU, Ludhiana.

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14. Seth, Devanshi. *Prevalence and evolution of virulence gene combinations in Puccinia recondita and Ustilago nuda tritici*. PAU, Ludhiana.

15. Shahi, Vijoy Kumar. *Biochemical and physiological basis of heterosis and homeostasis in Drosophila punjabiensis*. PAU, Ludhiana.

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19. Verma, Krishan Lal, *Studies on the biology, natural enemies and chemical control of the peach leaf curl aphid Brachyacudus helichrysi (Kaltenback)*. HP Krishi, Palampur.

20. Walia, Ajit Singh. *Effect of some growth factors on water use and its efficiency in wheat*. PAU, Ludhiana.

21. Yadav, Om Prakash. *Studies on mosaic disease of pea, Pisum sativum L*. HAU, Hissar.

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Bowman, Mary Jean. Education, population trends and technological change. *Eco Edn Rev* 4(1), 1985, 29-44.

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Churchhouse, R.F. and others. The influence of computers and informatics on mathematics and its teaching. *Mathematical Education* 1(2), 1984, 5-12.

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JARRET REVOLUTION (Editorial). *THES* (648), 5 April 85, 27.

Satish Chandra. Higher education in India. *Mainstream* 23(30), 23 Mar 85, 15-21.

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Sloman, Albert. Diverse but cohesive : An authoritative overview of the British university scene, *ABCD* (67), 1985, 7-10.

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G.P. Thakur
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III.	Pathology	—	—	—	1
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REGISTRAR

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(3) Higher starting salary may be considered in exceptional cases, if recommended by the Selection Committee.

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The details of qualifications etc. can be had from the Director, Department of Publications and Press, Osmania University, Hyderabad-500007 (A.P.), free of cost in person or on requisition by sending a self addressed and stamped envelope.

REGISTRAR

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Editor :
M. S. RAMAMURTHY

Workshop on Bhopal Tragedy at IIT Bombay

Deeply concerned about the Union Carbide India Limited tragedy at Bhopal, the Department of Humanities and Social Sciences and Environmental Science and Engineering Group at IIT Bombay had organized a one-day workshop on 'The Bhopal Tragedy—Lesson to be learnt' on March 5, 1985. The participants included undergraduate and post-graduate students, faculty and a number of eminent technologists, physicians, journalists and trade unionists, who had visited and worked in Bhopal soon after this disaster.

The introductory note for this one-day long workshop was given by the Director of IIT, Bombay, Professor B. Nag. The discussions centered around the following topics:

(1) Sequence of the episode and technical background
(2) Safety and industrial practices
(3) Human health and medical care
(4) Environmental Issues—Assessing Impacts.

In the opinion of the workshop for implementing integrated plan for medical, social and health rehabilitation of all those affected by the Union Carbide disaster neither industry nor Government can be solely entrusted to look after safety and an autonomous National Environmental Health and Safety Agency must be set up to formulate and enforce stringent regulations. Such an organization would put pressure both on Government agencies and industries to prevent abuses of the environment. Its function would be :

(a) Preparation of a register of hazardous substances; and collection, collation and dissemination of information on health and environmental hazards. Such information should be updated from time to time.
(b) Pressing for open accessibility of information regarding technological and environmental aspects related to commissioning and operation of all developmental projects.
(c) Supporting peoples' movement and organizations working for a clean environment and pressing for stringent enforcement of laws.
(d) Clearance by such an Agency must be made a precondition for industrial licencing ensuring consideration of a scenario for crisis management in Benefit-Cost Analysis of the project.
(e) This Agency must include representatives of voluntary organizations, the public, susceptible population, trade union representatives and independent experts.

The workshop further felt that a more comprehensive Environmental Impact Assessment should be made mandatory for all developmental projects. Environmental Impact Statement must be circulated to academic institutions of repute for evaluation to enable an objective assessment before according clearance by the Ministry of Environment and Forests. Also, the public should have the right to complete information, in keeping with Constitutional rights, on the hazards they may be exposed to. Public hearing on environmental assessment should be made mandatory.

It is believed by the workshop that such a hearing will enhance the learning process and instil greater responsibility towards the environment and society.

Existing provisions of industrial siting as well as zoning of human settlements should be critically examined, reformulated if necessary, and strictly implemented, the workshop opined.

Two other steps recommended were that Government Agencies, Development Banks, International Lending Agencies and International Collaborators must exercise control over investment decisions on the projects they finance with respect to environmental safety and that existing compensation laws must be thoroughly modified to update them to conform to realistic levels and to act as punitive deterrents.

Some Thoughts on Agriculture in the Seventh Plan

Malcolm S. Adiseshiah*

The XVII Lal Bahadur Shastri Memorial Lecture was delivered by Dr. Malcolm S. Adiseshiah at the Indian Agricultural Research Institute, New Delhi on 1st Feb., 1985. The first part of the lecture was published in the last issue. The second and concluding part appears below.

A second constraint is the deteriorating input—output relations in the foodgrains and agricultural production sector, which has been in evidence since the post green revolution period starting 1968-69. To make the presentation more upto data and manageable and using CSO data on inputs and outputs from 1979-80, on the input side : (a) the HYV area increased from 35.2 million hectares to 52.5 million hectares in 1983-84, which was an increase of 49 per cent in the 5 year period; (b) quality seed distribution increased from 14.7 lakh quintals to 57 lakh quintals, which was a 400 per cent increase during the period; (c) fertiliser consumption increased from 52 lakhs tonnes to 72 lakhs tonnes which was a 36.7 percent increase; (d) pesticides application increased from 43,000 tonnes to 72,000 tonnes which was a 60 percent increase; (e) irrigation rose from 52.6 million hectares to 61.7 million hectares, which was a 17.3 percent increase; and (f) energised pumpsets increased from 40 lakhs to 56.5 lakhs which was an increase of 41.2 percent in that period. This means that with the base year 1970-71=100, the value of inputs increased from 142 in 1979-80 to 178 in 1983-84, whereas the value of the output during that period using 1970-71 prices moved from 105.5 to 135.2, making the productivity index which is output index/input index move from 74.3 percent to 76 percent during the period. The CSO data from 1970-71 to 1983-84 shows an increase in real input at the rate of 4.4 percent per annum and the increase in real output at 2.4 percent, showing a decline of the input output ratio by 24 percent in the 15 years. This worsening incremental capital output ratio (ICOR) needs to be arrested and reversed during the Seventh Plan, through the components of growth referred to earlier, namely conservation and improvement of soil and water use and promotion of organic manures and increased forest cover to strengthen agricultural ecology. While these remedial actions are referred to in the Approach Paper, it is to be regretted that there is no reference to the fact that increased outputs since the green revolution period are being obtained at the cost of an even higher increases of inputs, which is wastage of our scare capital resources.

A third constraint is the imbalance both in the rate of contribution of individual crops to foodgrains and agricultural production growth and in the performance rates as between States. Taking first the imbalance as between crops, a study of CSO's foodgrains production data from the post green revolution period, 1967-68 to 1982-83 shows that not only has the accelerating wheat production followed by rice (in the case of rice except for Andhra Pradesh, the increases have been from the non-traditional states) contributed to the food grains growth, but also increased productivity in these two food crops played the major role in their accelerated output. A similar longitudinal study of cash crops shows that their increased production in the post green revolution period was confined to four out of the seven crops, cotton, jute, tea and rubber, the increase being due to in large degree to increase in the area cultivated. With regard to inter-state imbalance, as noted earlier, during the period 1967-68 to 1982-83, only Punjab, Haryana, Western Uttar Pradesh, Maharashtra, Gujarat and Andhra Pradesh recorded foodgrains production increases, well above the all India rate of 2.24 percent. Similarly in oil seeds, only seven States show rates above the all India average of 1.8 percent, namely, West Bengal, Orissa, Gujarat, Assam, Rajasthan, Haryana and Maharashtra. Some effort to increase the contribution of millets and pulses on the foodgrains side and oil seeds and cotton among cash crops, alongwith the help to the ten legging States in both foodgrains and non-foodgrains production is the task facing us in the Seventh Plan.

A fourth rather difficult issue that we will face in the Seventh Plan is the problem of buffer stocking, because the larger the buffer stock the more will we be able to counter fluctuations in production and meet the demand for the product in the lean years on the one hand, but also the more will we be promoting or atleast not countering the causes that make for instability in farm production on the other. The Government announced in December 1, 1984 that its foodgrain stock was 21.58 million tonnes, comprising 15.5 million tonnes of wheat, 6.01 million tonnes rice and 0.7 million tonnes millets, and the offtake from the Government stocks by the public distribution system during the first 11 months of 1984 was 12.28 million tonnes, comprising rice 6.28 million tonnes and

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* *Chairman, Madras Institute of Development Studies.*

2 MAY 1985

wheat 5.91 million tonnes. Assuming that the 1983-84 procurement prices for wheat at Rs. 152 per quintal, for rice at Rs. 132 per quintal, and for millets at Rs. 124 per quintal were used to build the foodgrain stock of 21.58 million tonnes as on December 1, as on that data Rs. 3236.1 crores were tied up in this stocking operation. If to this, the subsidised interest rate of 10 percent is added, something like over Rs. 3600 crores is involved. There is need in the short term to have some buffer against supply short falls (and help stabilise food prices and farm incomes). What that should be and how far that supply shortfall can be met by imports need careful study. I would set aside something like Rs. 500-1000 crores for this purpose for emergency food purchases. But the more important issue for the Seventh Plan is first not to continue to use the buffer stock as an alibi for not controlling the basic causes of agricultural production shortages and instabilities, such as serious drainage and irrigation problems which make the adoption of the new technology risky, lack of timely supply of water and power, poor testing of seeds and inadequate extension services, low product prices and short supply and/or inappropriate timing of credit that makes impossible optimum application of inputs, land ceilings being notional rather than effective and real. The question facing the Seventh Plan is whether instead something like Rs. 3500 crores a year being currently unproductively invested in foodgrains buffer stocking, atleast Rs. 3000 crores of that sum should not be released to optimise agricultural infrastructural programmes like drainage, irrigation, land and water management, the provision of credit to the small and marginal farmer who has little or no access to inputs, as a means of reducing the production instability referred to earlier, augmenting productivity by reducing the rising ICOR, and moving a little more quickly towards social justice and expanded employment in agriculture.

Finally this reference to social justice brings up a series of constraints which are in effect trade offs between the unilinear objective of increased agricultural production, and some other Plan objectives that we have set forth, once more in the Approach Paper to the Seventh Plan. These other Plan objectives include expanded employment, land reform and land ceilings and reduction of poverty.

On employment generation and acceleration which we have placed for ourselves in the forefront of the Seventh Plan, as one of its 3 priorities, the question of mechanisation of agriculture which has proceeded apace in the Punjab, Haryana and Western Uttar Pradesh in particular, which are the lead areas in the accelerated foodgrains and cotton and sugarcane prodution, and its effect on employment needs some thought. It has been estimated that of the 75.33 million standard person years or 100 million unemployed and labour force entraints during the Seventh Plan not more than 10 million will be employed in the organised non agricultural sector, so that agriculture and small and rural industry will have to be the major source of employment for 90 percent of this group looking for employment. The Agricultural census report that between 1951 and 1981 the number of tractors has increased from less than 1 lakh to 6.65 lakhs at the rate of 14.7 per cent per annum, the number of oil engines has increased from 0.66 lakhs to 35 lakhs at the rate of 13.2 percent per annum, the number of electrically operated irrigation pumpsets has increased from 0.21 lakh to 26.1 lakh at the rate of 26.1 percent per annum, while animal drawn carts and ploughs have decreased by—1.7 percent per annum, sugarcane crushers worked by bullocks by —1.2 percent per annum, hand harrows by—2 per cent per annum and bullock or hand operated irrigation by—2.7 percent per annum. The population census, on the other hand, report the percentage of workers in agriculture and allied activities has fallen from 72.1 percent in 1951 to 68.8 per cent in 1981, with the percentage of cultivators falling from 50.0 to 41.6 and labourers and others rising to a lesser extent from 22.1 to 27.4. The declining percentages of employment in agriculture do not mean a decline in the aggregate quantum of employment, but only a slower rate of increase in employment. I know that the effect of farm mechanisation on employment is a much debated and unresolved issue. A valuable NCAER 1981 study on tractorisation shows that tractors are used not only by large farmers but also by small and medium farmers who buy on hire tractors because they find it cheaper than employing draught animals as well as a means of earning an additional income. Regarding the impact of tractor use on agricultural employment, the study notes that in all states the per hectare employment of hired labour is higher in tractorised farms. Tractorised farms employ less labour in operations where a tractor is used, but more labour in operations where a tractor is not used. In some States, the additional labour used in operations not involving the tractor more than compensates the labour displaced by the tractor: in other States there is a net decline in employment. There are other investigations which put forward similar views. My own studies in my State show that the massive energisation of pumpsets has thrown out of employment a larger number of labourers employed in bullock operated or body operated irrigation and leather workers than those additionally employed as a result of the extended cultivation. I am not trying in this lecture to resolve this long standing argument. My point is a limited one of there being in some cases a trade off between mechanisation aimed at increased product and income and increased or no decrease in employment. This trade off should be faced in the Seventh Plan.

The NCAER study also concludes with the fact that in all cases there is a decline in the proportion of family labour, especially of women and children and their increased substitution by hired labour. This is also supported by a study of the farm households in the South using HYV, which in general raised family incomes, leading to lower use of female family labour. This to some extent meets one of the aims of the Seventh Plan concerning women, which in the words of the Approach Paper is that 'the basic approach would be to enable women to acquire confidence in themselves and their capabilities and develop a sense of responsibility towards the overall betterment of societies and their individual societies'. On the other hand, the HYV study also shows that one of the effects of HYV is to increase the demand for casual labour (as against seasonal and permanent workers) because of the increased work involved in transplanting, weeding and harvesting, work in which women casual labourers are used. Such women are from poor families who work hard on the farms, but have no control over their incomes which are taken over by the husbands. The study concludes that the increased demand for women causal labour does not increase their real wages, continues intra household inequalities in access to income and consumption claims, and so brings out the need for a special focus in Seventh Plan policy on employment and income requirements of such women from landless households. This is within the framework of the Seventh Plan objective referred to earlier, but its enforcement may not result in increase in agricultural production.

There is also a constraint in the form of a trade off in regard to land reform, including land ceilings. The freeing of bonded, labour (which despite two 20 point programmes is still a large living reality, estimated by the National Institute of labour at 22.4 lakhs in 1978), and the establishment of tenancy and land records are absolutely necessary and desirable, from the point of view of fundamental rights and directives of State policy set forth in the Constitution. Again in the area of land reform, the annual report of the Ministry of Rural Development for 1983-84 states that since 1980, of the 72 lakh acres of land declared surplus, 57 lakh acres have been taken over, but only 41 lakh acres distributed. It also reports that 5,20,000 hectares of land declared surplus are locked up in court cases filed by land owners particularly in 7 States. I will also recall the controversy over the amount of real surplus land; the Draft Plan 1978-83, for instance, using NSS data estimates the area of surplus land available for distribution as 220 lakh acres against the 72 lakh acres that the government has officially declared surplus. We have been committed to these programmes since the Fourth plan and have reaffirmed our commitment in the Approach Paper to the Seventh Plan. That small farms are move intensively cultivated, that returns on their inputs are more optimal than those of large farms, that credit made available to them leads to cultivation of the uncultivated land while the equivalent credit made available to large holdings is often diverted to more profitable non agricultural investments, apart from the proven thesis that the new farm technology is scale neutral have been repeatedly documented. But there is the opposite view expressed by one of my colleagues that 'small farms with low land man ratio cannot effectively absorb the elements of developing modern technology. As a result, an increasing proportion of rural agricultural population with an inadequate land base if bound to fall below the poverty line. It is therefore imperative that our land ownership and management policy must aim at increasing the farm size and shifting the population out of the agricultural sector'. This is not a case against small farms, but in effect calls attention to the trade off between sacrificing some agricultural growth for satisfying the land hunger of the landless in providing them with unviable farms.

Involved in the above argument is the constraint arising from the fact that while some part of the new technology may increase farm production, it may not reduce rural poverty. A fascinating study comparing the impact of irrigation with the impact of animal husbandry and rural industry on village development and incomes of its households shows, that is, on poverty reduction in three South Indian areas in Karnataka, Tamil Nadu and Andhra Pradesh, concludes that irrigation percent has little effect on marginal lands, while it leads to increased production in large holdings; that poverty level which was 77.8 percent on the average in the area surveyed was 79.8 percent in dry villages and 75.5 percent in wet villages; the impact of animal husbandry on incomes of the small and marginal farms was a little more than that of irrigation. On the other hand, the impact of diversified rural industry, (which is not at the cost of farming because industry and agriculture reinforce each other) not only raised incomes, but in the villages where farming and rural industry are integrally linked, as in the Coimbatore area (or most parts of Punjab and Haryana), while poverty is not eliminated (that would require structural and asset ownership changes which go beyond the scale of farming and small rural industry that is considered here), the quality of life of such villages as measured by drinking water facilities, medical care, improved housing, higher school attendance, and literacy rates, was distinctly higher than in the villages served by irrigation alone. The issues raised here do not make a case against irrigation, though the unbelievable time and cost over runs reported by the Ministry of Irrigation raise questions as to seriousness with which this vital input to the agricultural sector is being provided: out of 65 major irrigation projects which continue from April, 1976 to be completed by this year, only 38 will be completed, the other 27 spilling over into the Seventh Plan, while cost over runs add upto over Rs. 4000 crores. The point made is that there being a trade off at the margin between investment in irrigation and that in animal husbandry and rural industry, the trade off has to be recognised and an optimum investment mix established. Similarly, to revert to the earlier discussion on mechanisation, the ownership of land as well as the machinery associated with it contribute to inequalities in incomes from crop production, with the latter being the dominant causal factor in a mechanised farming situation as in Punjab. This raises the question of trade off between land ownership versus other assets ownership in such a farming situation, with policy implications for the role of assets other than land in crop production and incomes therefrom.

Some Facilitating Factors

I would like to conclude this lecture with some suggestions which would facilitate the attainment of agricultural and foodgrains production objectives in the Seventh Plan within the overall Plan frame and aims. These factors cover policy, delivery system and research and development.

The key variable in the Seventh Plan will be the agricultural policy that is formulated and followed. That is, I am assuming that the Seventh Plan strategy, and I define strategy as a consistent set of policies, will ensure that agricultural policy will be formulated so as to be consistent with industrial policy, export-import policy, fiscal policy, price policy, employment and poverty-reduction policy etc. This has not always been the case in the Sixth Plan and earlier. One of the main purposes of Planning is to take advantage of the opportunity afforded to avoid ad hoc and piecemeal decisions, and aim at fitting in each policy instrument with others in the interest of consistency and optimality. In agriculture, the policy is the main instrumentality, as agriculture is almost totally an individual, atomised, private sector activity, and there can be no agricultural plan, in the sense of deciding and directing what millions of independent farmers and farm workers will do or will not do. Hence agricultural policy with regard to security of tenure and consolidation of holdings, provisions of short-term, medium term and long-term credit to farmers, the quantum and availability of inputs and their prices, the forestry and ecological safeguards, the development of markets, system of procurement, support and administered prices, as well as agricultural taxation and the fiscal impact of export duties on agricultural exports, notably plantation crops, and import levies on farm machinery, some inputs and products like rubber, become decisive. In the absence of data of the prices paid by the farming community for the products it purchases and the prices received by it for its products, called the parity index, a proxy is the price of agricultural products index as per cent of manufactured products index, which shows during the VI Plan that prices of agricultural products were somewhere between 10 percent to 19.1 percent lower than prices of manufactured prices, the percentage difference between the two ranging from 81.9 at the start of the plan and 84.7 percent at the end. For Tamil Nadu, where the Parity Index is available for the Sixth Plan, the index shows that the terms of trade were rather seriously stacked against the farming community at 68.3 per cent in 1980-81, 78.1 percent in 1981-82, 63.3 per cent in 1982-83 and 72.4 percent in 1983-84, which is an expression not only of the lower level of prices received by the farmer in relation to that paid out by him, but also a worsening of his position in two out of the 4 years as the following table shows:

Table-IV

Year	Parity Index Index of prices received by the farmers	Index of prices paid by the farmers	Base 1954-55-100 Parity Index
1980-81	459.3	471.8	68.3
1981-82	607.0	770.0	78.1
1982-83	536.2	846.5	63.1
1983-84	677.2	933.6	72.4

Source: Commissioner of Statistics, Government of Tamil Nadu.

To this, agricultural policy through its many components in the Seventh Plan must aim at moving towards parity as far as the farming community is concerned. It cannot in one plan period reach parity, but it can, arrest the terms for the farmer continuously deteriorating.

A second sphere where the Seventh Plan can facilitate the attainment by the farming and fishing community of the foodgrains, cash crops and allied programmes of animal husbandry and fisheries perspectives set forth in this lecture is by restructuring the education and extension services provided to the farmer in his capacity as one raising crops or engaged in animal husbandry or to the fishing community. The education and extension services are today provided in most states by the government, which is a drawback because the government is essentially and rightly a law enforcing and norm setting and applying agency which cannot also follow the paths of participation by and of the farming community, which should be the bed rock and foundation of all education and extension activities. The government should provide surfaced road between the village farm and the market, it should provide electricity to the farmers, through conventional and increasingly additional non-conventional sources, and all the inputs referred to in the previous section. But the task of conveying the latest technology and research results to the farm through making the farmer a participant in the techniques of applying the new technology should be the responsibility of the agricultural universities. This is an educational task which should be discharged by the educational institutions. The agricultural universities should be given the funds in the Seventh Plan to take over and run the education and extension services in the areas of crop production, animal husbandry and fisheries. The success of even the partial application of these services delivery system which originate from the agricultural universities in the North-Western areas of the country should be carried further forward in the Seventh Plan, so that in all states the complete responsibility for education of the farmers, husbandry man and fisherman, and the extension services to them are firmly located in the farm universities, with all the administrative and infrastructural support provided by the government and the credit supplying institutions.

Finally and above all the most important facilitating service is the continued development and intensification of agricultural research and development, which is sole responsibility of the agricultural universities. The increases in agricultural production so far have been based largely on the assumption of a given production function to which increased savings and investments in new lands and additional inputs have been provided to produce the increases. But it is now nearly three decades since we have accepted the proven doctrine that growth is for the major part, the result of education, knowledge and innovation with innovating being the preponderant cause, and capital investment per se being a marginal causal factor. No longer can agricultural production and the production function rest on the assumption of a given technology, both have to move upward, which movement caused by innovation and increased knowledge calls for increased investments. The recent Ministry of Agriculture's statement describing the 1983-84 food grains output of 151.54 million tonnes and the 1984-85 kharif production of 89.77 million tonnes as the start of the second green revolution found some what euphoric, but the grain of truth in it is that unlike the first green revolution based on Mexican wheat and IIRI (Manila) rice, the genetic varieties now in use are the product of R and D of Indian agricultural universities and are spreading to include the agricultural backward states. (60.8 percent of increased 1983-84 product came from Bihar, M.P., Orissa, U.P. and West Bengal). In other words, if this statement is a recognition of the decisive role played by the research and development work of the agricultural universities, it is welome, and should be followed up by placing at their disposal the necessary resources. Apart from the large additional funds that they will need if they are to anchor the farmer's (and fisheries) education and extension services, there is some question as to whether their research programmes are being adequately funded. They have been provided with Rs. 10 crores at the start of the green revolution in 1968-69 and with Rs. 110 crores in 1982-83, during which period the number of agricultural universities have quadrupled, and prices as measured by the wholesale price index have more than trebled from 19.7 percent in 1968-69 to 307.5 in 1982-83. It is not surprising therefore that the tenth annual convention of the Indian Agricultural Universities Association meeting on December 27 and 28, 1984 in Hyderabad states that the lack of finance had adversely affected the working, particularly the R and D of the universities, and that there is an urgent need to increase funds to them. Given the large national issues at stake, a sizeable increase in the funding of the research and development work of the agricultural universities, of which this university here, the Indian Agricultural Research Institute, is in many ways an exemplar, and of their obligation to develop and operate and education and extension service to transfer these technical innovations to the farms, animal husbandry areas and fishermen is one simple way in which the government, and we, the people, can honour the memory of that man of the people, Lal Bahadur Shastri, whom we commemorate this day. **[Concluded]**

Admission of foreign students to Indian colleges/universities

USI Arab Regional Office was established in Bahrain in 1982 with a view to promoting teaching about the United Nations system in schools in the region. The office was sponsored in collaboration with the Bahrain National Commission for Unesco (Ministry of Education) of the State of Bahrain.

USI Arab Regional Office has been publishing a quarterly magazine called Workshop of Peace, and organises competitions in painting and essay writing in order to create awareness about environmental activities in the region's schools.

In course of our activities we have been approached by students interested in seeking admission for further studies in India. They require admission basically in medical and engineering courses. There are also those seeking admission to commerce, accountancy, etc.

The present secondary education system in Bahrain is recognised as equivalent to 11 years. This necessitates that these students if admitted in India will have to go in for one-year pre-university course before applying for engineering or medicine. In some states they are directly admitted to the first year degree course.

USI Arab Regional Office is interested in evolving a simplified procedure to facilitate their admission to about 15 Indian colleges.

Colleges and universities interested in this scheme are requested to contact USI Arab Regional Office, P.O. Box 726, Bahrain or United Schools International, USO House, 6, Special Institutional Area, New Delhi-110067.

USI Arab Regional Office is further interested in appointing an experienced official to provide guidelines and information and to liaise between applicants and universities to facilitate admission through personal contacts in India.

The scheme is intended to promote mutuality between India and Bahrain.

Dr. Varadarajan Addresses Convocation of Guru Nanak Dev University

Excerpts from the Convocation Address delivered by Dr. S. Varadarajan, Director-General, Council of Scientific & Industrial Research at the Guru Nanak Dev University, Amritsar on February 18, 1985.

Convocation

"There has been an explosive growth in University education in the years since independence, and considerable emphasis on education and training in Science and Technology. In spite of expansion in facilities, the competition for admission to courses in engineering, medicine, technology and science is increasing year by year. Students and parents are burdened with anxieties on this score. There have been increases also in opportunities for post-graduate studies in science, technology and engineering and for research in these.

"Simultaneously, there has been a steady expansion in investment in basic and applied research through the major research agencies and scientific departments of Government, and to an extent through industry in the public and private sectors. It also appears that those who receive training and education in these areas in our Universities and Research Institutions do not always find it profitable or feasible to utilise their knowledge and training in a satisfactory manner, and many take up professions in which the special education and training received are not of particular value. Many research laboratories of major agencies of Government as well as of industry, from time to time, do not find it possible to locate science and technology personnel of satisfactory standard to meet their requirements. At the same time, substantial numbers with doctorate degrees do not find employment for long periods. It seems appropriate to examine the expansion in Science and Technology education and training and the manner in which these are utilised in a significant manner for achieving national goals.

Growth in Science & Technology Education

"The number of Universities has increased from 27 at the time of independence to 148 presently. The annual out-turn of graduates, for 1950 and 1980, from our Universiries is given below:

Category	Out-turn in Thousands	
	1950	1980
Science	9.63	120.00
Engineering/ Technology	1.90	19.03
Agriculture	1.07	6.37
Veterinary Science	0.24	1.21
Medicine	1.56	12.91

"As a result of the increased out-turn, the total stock of S & T personnel, which stood at 1.9 lakhs in 1950 increased to 19.5 lakhs in 1980 and to 24.7 lakhs in 1985. These totals include degree and diploma holders in Engineering, graduates and post-graduates in Science, Agriculture and degree holder in Medicine. While the rate of growth of S&T personnel as a proportion of total population is increasing, the present stock of S&T personnel is of the order of 3,721 per million of papulation. It is quite low as compared to other countries, as can be seen from the figures from a few selected countries:

Category	Stock of Scientists, Engineers and Qualified Technicians per million of Population
Australia	117,047
Argentina	83,727
Brazil	55,846
Bulgaria	101,840
France	23,747*
FRG	136,028
India	3,721
Japan	312,793
GDR	86,968
South Korea	52,311
Netherlands	164,269
Poland	145,329
Sweden	262,698
Switzerland	39,657*
USA	13,781*
USSR	114,817
Yugoslavia	142,233

*Figures for Scientists and Engineers only

"It can be seen that despite the very rapid growth in numbers of trained science and technology personnel since independence, the numbers of such trained personnel per million of population in India remains quite low in comparison with many countries. Education in Science and Technology subjects should no longer be considered a highly specialised education to be given only to a few. Science and Technology are today the basic resources and forces through which major economic and social transformations are taking place. The fullest realisation of the fruits of advances in science and technology can be obtained not only by carrying out advanced research but through successful and quick transfer of those advances into a society, whose members have a good appreciation of the principles of science, and have been prepared, through some knowledge of science, to accept and introduce changes suceessfully. A very large percentage of the total population in Japan has training in some form of science and technology, and this has undoubtedly helped in the ready acceptance and assimilation of new technologies continuously and enthusiastically.

"It is obvious that the order of increases needed in education and training in Science and Technology of large numbers of the total population could not be achieved through the present methods of formal education and requiring full time attendance in schools and colleges. The introduction of a wide network of radio and television communication, offers us excellent opportunities for imparting knowledge through non-formal methods. Many countries in Europe, as well as in China, are now using television as a very important medium for education in many ways in particular in Science and Technology...

Quality of Science & Technology Education

"The very rapid increase in University education in Science and Technology during the last 35 years has not invariably been accompanied by sufficient attention to maintain quality standards. While specialised institutions such as Institutes of Technology and Regional Engineering Colleges, as well as some of older institutions with traditions, have struggled very hard to maintain high quality standards, similar adherence to standards has not been possible in most other institutions. Despite the very keen interest of students as well as faculty, facilities for laboratory work as well as training in workshops are meagre. Equally, facilities for libraries have also not been increased. This has resulted in students relying on textbooks only without opportunities for self-discovery through experimental work. Many fundamental principles of science and engineering, therefore, are only learnt through textbooks and not through practice. There is therefore, very urgent need to upgrade facilities in many institutions. Since these are expansive, it may be necessary also to stagger working hours and utilise such laboratory facilities through shift working. Here again, use of modern communication facilities such as television and radio could very substantially increase the comprehension of principles and systems by students. I may suggest that a few institutions may immediately be chosen for trial purposes for innovations in education, and the experience derived could form the basis of extension of similar methods to all educational institutions. Simultaneously, special attention needs to be paid to the faculty improvement programmes. In recent years through the initiative of UGC, special arrangements have been made for teaching staff in colleges to be provided special assistance for carrying out research and acquiring degrees. Some personal experience of research is very necessary for faculty to have an appreciation of the methods of science and of the existence of scientific journals and publications containing reviews and advances...

Practical Training in Science, Technology & Engineering

"In recent years, there has been a consistent attempt to add to the contents of the courses in science, engineering and technology. Students are forced to spend much more time in studying numerous subjects and in obtaining credits. The number of years for degree courses in engineering have been reduced, and the full course has now to be completed in a shorter period of time, imposing heavy burdens on students and parents.

"One of the consequences of these steps is the absence of the practical training. Although there are schemes for summer training of engineering students in industry, in practice these exercises remain merely familiarisation of industry in a manner similar to that given to an occasional visitor. If practical experience has to be gained, groups of students have to be accom-

Association of Indian Universities

AIU House, 16 Kotla Marg, New Delhi-110002

Applications are invited by 4th May, 1985 on the prescribed forms available on payment of Rs.2/- from the office of the Association of Indian Universities for the following posts:

1. **Cultural Officer** (Rs. 700-1300): Master's Degree from a recognised institution/university with a Bachelor's Degree in Fine Arts or its equivalent from a recognised uinversity/organisation. Five years experience with a minimum of two years in organising cultural activities at University or equivalent level. Incumbent will be responsible for organising cultural programmes at Inter-University/National Levels. Deputation from University/Colleges/Other organisations will be preferred. (Well qualified candidates may also be considered for the higher scale of Rs. 1100-1600).

2. **Assistants** (Three) (Rs. 425-800) — Graduates with atleast five years experience in Govt./Semi-Govt. Organisations/Educational Institutions. Knowledge of typing will be preferable. In addition: For post (i) Candidates should be B.Com. (Hons.) with atleast second division or B.Com with first division. Knowledge of use of computers in accounts will be preferable. For post (ii) Experience in production, printing and proof reading. For post (iii) Flair in noting & drafting, familiarity with office procedures.

3. **Stenographer** (Rs. 425-800): Graduate having speed of 120/60 wpm in shorthand/typing with minimum three years experience as Junior Stenographer.

4. **Lower Division Clerk** (Rs. 260-400) : Higher Secondary with typing speed of 40 wpm. Preference will be given to those having office experience and knowledge of shorthand.

Posts are temporary but likely to continue.

All posts carry AIU allowances generally at the Central Government rates. Preference will be given to SC/ST/Ex-servicemen.

panied by the faculty and arrangements would have to be made in discussion with industry to have rigorous training programmes. In addition, such well trained students and faculty should also take up specific projects for effecting improvements and for increasing productivity. If such challenges are incorporated into the training programmes, students as well as industry are bound to benefit. Furthermore, it is well known that students who receive very good industrial training tend to continue in the profession of science or engineering rather than gravitate to other careers.

"There are also now many new innovations being tried in many countries for combining practical experience with good education in the University. Institutions such as Imperial College of London are making arrangements for students to spend one year fully in industry before the last year of their education. In many cases, as a result of the contacts established, such students after graduation find ready employment in industry. This type of programme obviously requires very good interaction between educational institutions and industry, and financial support to students. Similarly, it is noted that students admitted to engineering and technology courses in the Technical University in Beijing (China) are required to spend their first year in workshops, producing a number of products which are finished and marketed. During the first year, students get training in many different skills and crafts. They become entirely familiar with workshop practices also. Their preparedness for absorption of new knowledge in subsequent years of education increases very sharply as a result of this practical training. It is hoped that experiments of such types will receive encouragement from those who are responsible in Government for funding training, as well as from industry. It is also possible for students in science to be attached to research laboratories, hospitals, analytical laboratories in industry, and to laboratories specialising in environmental assessment, forensic studies, customs and exports.

Post-Graduation Education

"The facilities for post-graduate science education have been increased very substantially in recent years. Numerous institutions offer courses for Masters' degrees, in many general areas of science, as well as in very special subjects which large number of students pursue. However, only a small fraction of those who qualify, actually pursue science as a career. Many are diverted to All India Services and to professions such as banking or marketing and sales. It may be useful to review the current position on post-graduate science education and improve quality standards, and limit numbers, if necessary. Currently, over 17,000 qualify every year for degree of M.Sc. It is possible that as our industrial development is increasing rapidly, there would be opportunities for all these graduates to find gainful employment. Appropriate study of manpower needs in post-graduate science education is very necessary.

"Faculty for undergraduate teaching as stated earlier, should have experience of research and should consequently possess the ability to consult journals and reviews on recent advances, in order to teach students on such advances. Faculty for teaching post-graduate courses should be engaged in contemporary research in order to communicate to the selected students adopting a career in science, technology and engineering the spirit of investigative and exploratory research, and to give them a sense of excitement and challenge. This principle of the need for Faculty to be engaged in research is not always followed. Courses for Masters Degrees are proliferating in colleges which have no modern laboratory facilities for research. The whole training and teaching tend to be similar to uader-graduate training. Students acquiring such post-graduate degrees vary in quality enormously, depending on the Faculty and the facilities in the institution for research. Most are not fully equipped to start research, or have too broad a view of science or to carry out independent investigative and analytical studies, when they join industry or Government institutions. Quite a number of such degree holders find employment also as lecturers in colleges. These are all positions of responsibility, and it is important that all those following post-graduate courses, without exception, have training through first-hand experience in the operation and use of modern measuring and analytical instruments and are guided and inspired by faculty of high standards.

Status of Post-Graduation Education in Engineering and Technology

"The status of post-graduation education in Engineering and Technology has been reviewed by a Committee chaired by Professor Y. Nayudamma. The Report of the Committee published in 1980 contains a number of interesting suggestions which deserve the attention of the Government. The Committee has noted that during a three-year period, while the number of seats available was 6,111, admissions accounted for only 5,090 and of those admitted only 2,686 completed the course. It is also not clear whether those who qualify, continue their interest in engineering and technology. It has been found that the engineers and technologists working already in industry for some period of time also take up courses for post-graduate degrees in engineering technology. All of them return to the industry enriched by the post-graduation experience and apply themselves fully to the problems of industry. It seems, therefore, desirable that special arrangements should be made to ensure that a good proportion of seats in post-graduate engineering and technology education are made available to those who have already spent some period in industry. Government may have to consider the methods by which such students can get adequate support.

Utilisation of Trained Personnel

"While it is found that most of those who qualify with degrees in engineering technology find employment in Government in or in Industry, it appears their experience and talents and knowledge are not fully utilised. In many Government Departments and public sector industry, large numbers of personnel are recruited and are assigned for several years jobs which are of a supervisory nature over routine production. Much of the work is of an administrative nature with little opportunity for application of knowledge and training in advanced areas acquired with much efforts during education. After a few years of such low utilisation and application of knowledge, their interests in technology decline. Even when they are promoted to high levels of responsibility where there are opportunities for use of modern knowledge, many are no longer able to meet the requirements, and turn to consultants and outside experts. This is very different from the way in which well-qualified engineers and technologists are utilised in enlightened industry in this country or in any similar situation in developed countries. Such engineers and technologists are mainly utilised for solving many technological problems, for effecting improvements and introducing innovations. They are engaged in developing new processes, designs and equipments. They are not involved in supervisory roles. Such supervisory positions are held normally by those without the benefit of university education and who have very long practical experience on a shop floor. It is important for Government and public sector industry to analyse very thoroughly the role of graduate engineers and technologists in their organisations.

Research

"It is noted that about 2,900 students are awarded Ph.D. Degrees in Science and about 200 qualify for doctorate degrees in Engineering and Technology each year. These are quite large numbers considering the present opportunities for gainful employment. At present there is no information available on the manner in which such highly qualified scientists and technologists are utilised in the country. It is hoped that with many incentives provided by the Government for industry to carry out research, and with the increasing emphasis on improvement of quality products and services, reduction in costs and improvement of productivity, there would be large opportunities for well-qualified research personnel to find employment. Although there are nearly 1,000 research units in industry which have received recognition by the Government, the actual expenditure on research by industry is still very small, representing only about 20 per cent of the total national expenditure on R&D. This situation is in contrast to that obtaining in many developed countries where a very large amount of R&D is carried out by industry. It is hoped that in the coming decade the Indian situation will also alter very substantially, and industry would invest very substantially in technology improvements are research, so that Indian products and services become equal to the most modern, in costs and quality, internationally.

National Expenditure on R&D

"The national expenditure on R&D, which stood at Rs. 180 crores in 1970-71, has increased sharply to Rs. 800 crores in 1980-81, and further to a level of Rs. 1400 crores in 1983-84. This expenditure, as a percentage of gross national product, stood at 0.38 in 1970-71, and rose in 0.68 in 1980-81, and to 0.80 in 1982-83. The major increase has been in the central sector, and the expenditure stood at Rs. 904 crores in 1982-83. About two-thirds of this was incurred by the major scientific agencies of the Central Government in Agriculture, Atomic Energy, Scientific and Industrial Research, Space and Medical Research, the balance being incurred by various Ministries.

"It is expected that economic Ministries and those concerned with public utilities and services as well as public and private sector industry will invest increasingly in R&D, technology upgradation and innovation in design. The Technology Policy Statement of the Government of India released in January 1983 lays particular emphasis on all these aspects, and ensures support for the absorption, adaptation and improvement of imported technology, as well as for the development of indigenous technology and for attaining a high degree of self reliance scientists technologists and engineers, have clearly a major role to play in achieving the objectives and aspirations contained in the Technology Policy Statement.

Conclusions

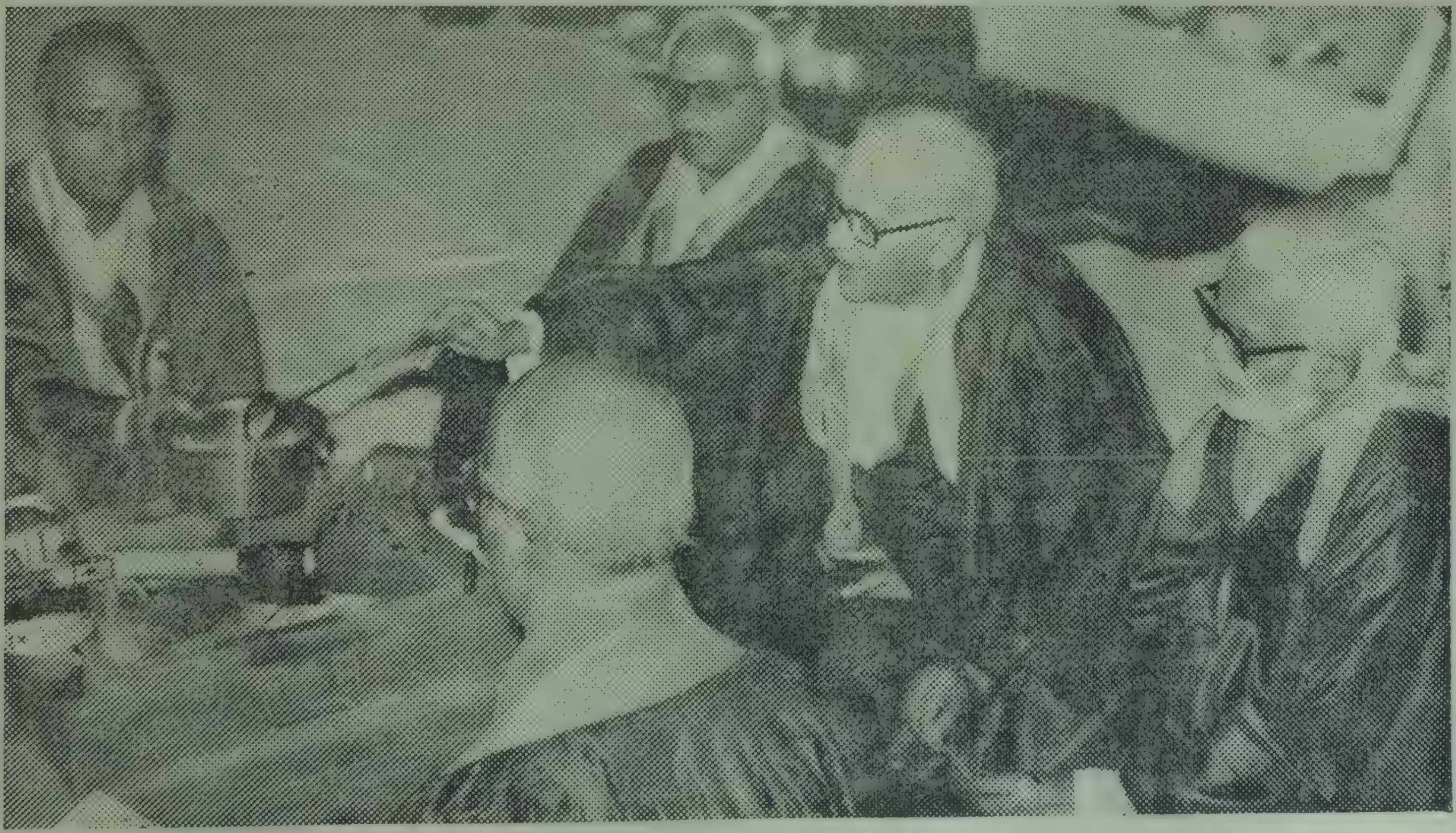
"India has made remarkable progress in increasing the amount of training and education in Science and Technology and in Engineering in the last 35 years. Nevertheless, the total stock of science and technology personnel per million of population is still low in comparison with many countries. Science and Technology education should become a normal and necessary part of all education, and non-formal methods have to be adopted to rapidly increase familiarisation with S & T. There is also a need to take several measures for maintaining and improving the quality of education in Science and Technology through the provision of greater facilities and through faculty-improving programmes. Opportunities are also to be provided for good practical training as part of education. Postgraduate education and training should be imparted to those who are deeply interested and who are likely to continue as professionals in science and technology.

"There are many changes taking place in public utilities and social services. Simultaneously, there are aspirations to improve such services very rapidly to standards comparable to international levels. Such changes can only be obtained through very substantial inputs of science and technology and by better utilisation of trained and educated science and technology personnel. I am sure the compelling necessity in the next phase of development in the country would make greater demands on science and technology personnel in, achieving its destiny for a better life for its people. India offers many challenges and opportunities to its scientists and technologists. I am sure educational institutions and systems would rise to meeting these new demands and challenges in the years ahead.."

85th Convocation of GKVV

Gurukula Kangri Vishwavidyalaya celebrated its 85th Annual Day and Convocation during 12th to 14th April. The Convocation was held in a ceremonial manner, with chanting of Vedic hymns, and in the presence of the sanyasis, students, general public, Arya bhaktas from Delhi, Haryana, Punjab and U.P. The Convocation was presided over by Shri Virendra, an eminent journalist and leader of Punjab & President of Arya Pratinidhi Sabha Punjab and Chancellor of the University. The chief guest was Pt. Satyadeva Bhardwaj, a philanthropist and an industrialist.

The Vice-Chancellor, Shri GBK Hooja, in his welcome address dwelt in detail on the overall progress and development of the Gurukula Kangri Vishwavidyalaya during the last one year. He expressed his happiness that the Vishwavidyalaya was now out of crisis and danger, was on a sound academic footing with a number of teaching and extension and research programmes in hand, more particularly the Ganga Water Integrated Study to map out pollution; Himalayan Project to study ecology and environment of the region; starting of M.Sc. Micro-Biology classes to give new direction to scientific studies, promotion of research in all the areas, more particularly in Vedas, Sanskrit, Philosophy, Ancient History & Culture, English, Psychology and Hindi; appointment of professors in almost all the departments, implementation of U.G.C. Merit promotion scheme for the teachers, construction of a play field and a symnasium hall, increase in the activities of sports and games with the appointment of a new Director of Physical Education, smooth and successful running of Yoga training and adult education programmes, spurt in the publication activities and extension programmes of rural development by adopting neighbouring villages for uplift by the university. The Vice-Chancellor also made a reference to the various conferences held in the university and the visits of dignitaries besides numerous Vice-Chancellors such as Shrimati Madhuri Shah, Chairman, U.G.C., Shri T.N. Chaturvedi, CAG, former Union Secretary to Education and Home Ministeries, and the increase in the maintenance and development grants.



Chanting of Vedic hymns in progress before the start of the 85th Convocation of the Vishwavidyalya

The Chief Guest while blessing the new graduates emphasized upon the Vedic system of education and Vedic religion. He asked the students passing out to demonstrate highest principles of morality and ethics, of good conduct and behaviour, of discipline and dharma, and never to do anything that may bring a bad name to their alma mater. Good education means change of sanskars and behaviour, and Gurukula is imparting value-oriented education which is the need of the day. He encouraged the Gurukulites to follow the footprints of Swami Dayananda and Shraddhanand.

Chancellor Shri Virendra also presided over the National Education Workshop. He in his addresses inspired the Gurukulites and teachers in particular to contribute intellectually towards the National Policy on Education being conceived by the Union Government of India. He was of the opinion that the vision and philosophy of education as purported by Swami Dayananda and Swami Shraddhanand and also by other Indian Rishis and Munis had not only national ingredients but also the seeds for a universal education. It was a mistake that India transformed and shaped its educational policy after independence mostly on the Western lines. The scholars here should ponder seriously and earnestly as to what should be the future course of education that could help in the solution of the problems being faced by the nation. These schemes and suggestions should be pragmatic, learner-based, on the principles of equality and equity, leading towards national integration and the all-round development of the learner. He repeated mere cramming and hoarding of degrees is not education; it should change man's personality, his mode and style of behaviour and living, his philosophy of life, his vision and mind. □

CALENDAR OF EVENTS

Proposed Dates of the Event	Title	Objective	Name of the Organising Department	Name of the Organising Secretary/Officer to be contacted
May 25-June 8, 1985	UGC Sponsored Workshop on "A Possible Methodology for Teaching English for Communication at undergraduate level".	To explore the possibilities of evolving and developing new strategies in the teaching of core English for communication at the undergraduate level and also to effect improvement of curricula, teaching methods, examination reforms, etc.	Faculty of English, Gandhigram Rural Institute, Gandhigram	Shri M.R. Kubendran, Faculty Member.
June 3-8, 1985	UGC Sponsored Symposium on Arthur Miller as representative of American Drama.	—	Govt. Postgraduate College, Dharamsala (H.P.)	Dr. Atma Ram, Principal
November, 28-29 1985	**International Conference on New Technologies in Higher Education**	**To assess the possibilities of the now available new technologies in the background of the broad social and cultural context and the state and trends of Higher Education in India and other developing countries**	**Association of Indian Universities, IIT/Delhi, JNU, Jamia Millia and University of Delhi**	**Prof. Tapas Mazumdar (JNU), Prof. S. Shukla (Jamia Millia), Prof. L.R. Shah (JNU)**
December 12-14, 1985	Asia Pacific Symposium on Wind Engineering	Nature of wind and effect on structures and study of damage and its socio economic implications	Civil Engg. Department, University of Roorkee, Roorkee	Dr. S. K. Pathak, Organising Secretary
December 16-18, 1985	Indian Geotechnical Conference	To advance the state of knowledge about the geotechnical engineering and to give definite direction to the future research work	Earthquake Engg. Department, University of Roorkee, Roorkee	Dr. V. H. Joshi, Organising Secretary

ICAR Summer Institutes for 1985

The Indian Council of Agricultural Research has decided to hold Summer Institutes in the field of agricultural sciences during the summer vacation of 1985 for the benefit of teachers, research workers and extension workers, particularly the subject matter specialists. The main objective of this inservice training course would be to communicate the latest technological advances in the subject and provide the necessary orientation to teachers and research workers of agriculture/agricultural engineering/Animal science/fisheries so that they are able to relate the teaching of their subject to the problems in their respective disciplines. The Indian Council of Agricultural Research have undertaken to meet the expenses for organising these Summer Institutes. While some broad details are given brelow, further information about the Summer Institutes and the prescribed application forms can be had from the Director of the Summer Institute.

Topic of Summer Instt.	*Tenative Date*	*Director*	*Venue*
Greenhouse Design & Environmental Control.	6-5-85 to 25-5-85	Dr. T.P. Ojha, Director	Central Instt. of Agril. Engg., Bhopal (M.P.)
Recent Advances in Forage Breeding for Farming Systems.	5-5-85 to 25-5-85	Dr. R.B.R. Yadav, Head	Div. of Plant Improvement, I.G.F.R.I., Jhansi (UP)
Agricultural Res. Management with emphasis on Project Management.	3-6-85 to 22-6-85	Dr. M. Rajagopalan, Professor	National Academy of Agril. Res. Management, Rajendranagar, Hyderabad.
Modern Methods in Plant Virus Detection with special reference to vegetatively propogated crop.	13-5-85 to 1-6-85	Dr. N.M. Nayar, Director	Central Potato Res. Instt., Simla (H.P.)
Physical Environment and Plant Growth.	22-4-85 to 17-5-85	Dr. D.K. Das, Head	Divn. of Agril. Physics, IARI, New Delhi.
Recent Advances in Production and Utilisation of Tropical Tuber Crops.	10-6-85 to 29-6-85	Dr. S.P. Ghosh, Director	Central Tuber Crops Res. Instt., Sreekariyam, Trivandrum.
Conservation Technique for Denduded Lands in the Hill Region.	3-6-85 to 22-6-85	Shri M.L. Khybri	Central Soil & Water Con. Res. & Trg. Instt., 218 , Kulagarh Road, Dehradun.
Advances in Intensive mutton production.	10-6-85 to 29-6-85	Dr. C.L. Arora, Director	Central Sheep & Wool Res. Instt., Avikanagar (via Jaipur).
Recent Analytical Techniques in Dairy Microbiology	3-6-85 to 22-6-85	Dr. D.N. Prasad, Head	Dairy Bacteriology Divn., NDRI, Karnal.
Information Systems for Agril. Sciences & Technology.	10-12-85 to 30-12-85	Shri. P.P. Deshmukh, Univ. Librarian	Punjabrao Krishi Vidyapeeth, AKOLA (M.S.)
Microprocessor applications in post harvest technology.	18-6-86 to 10-7-85	Dr. B.P.N. Singh, Prof. & Head	Deptt. of Post Harvest Process & Food Engg., GBPUA, Pantnagar (UP)
Unconventional approaches in plant breeding.	10-6-85 to 4-7-85	Dr. A.S. Khera, Head	Deptt. of Plant Breeding, PAU, Ludhiana.
Pesticide Management in Agriculture.	22-7-85 to 10-8-85	Dr. S.N. Puri, Professor	Deptt. of Entomology, MAU, Prabhani (MS)
Current Status of Res. Methodology in photosynthesis and Biological Nitrogen fixation.	18-7-85 to 12-8-85	Dr. Randhir Singh, Prof. & Head	Deptt. of Chemistry & Bio-chemistry, HAU, Hissar.
Summer Instt. on Environment & Ecology	24-6-85 to 14-7-85	Dr. G.P. Bisaria, Head	Deptt. of Botany, Bhupal Nobles College, Udaipur (Rajasthan).
Remote Sensing Applications in post harvest land & water resources aspects.	18-7-85 to 6-8-85	Dr. J.K. Sharma	Deptt. of Soil Water Engg., PAU, Ludhiana.
Cropping Systems Management	1-7-85 to 20-7-85	Dr. S. Subramanian, Director	Central Soil & Crop Management Studies, TNAU, Coimbatore.
Isolation & Identification of Mycoplasma from animals plants and humans.	Sometime in winter 1985	Dr. R.C. Pathak, Prof. & Head	Deptt. of Microbiology & Immunology, UP Vety. College, CSAUAI, Mathura (UP)
Recent Concepts in Preventive Vet. Medicine & Planned Livestock Health Programme.	27-6-85 to 17-7-85	Dr. H.C. Joshi, Prof. & Head	Deptt. of Medicine, College of Vet. Sc., GBPUA&T, Pantnagar, Nainital (UP)
Recent Advances in Breeding Methodology for Animal Improvement.	24-6-85 to 13-7-85	Dr. D.S. Balaine, Prof. & Head	Deptt. of Animal Breeding, College of Animal Sciences, HAU, Hissar.
Aquatic Pollution and its Abatement.	2-9-85 to 21-9-85	Prof. H.C. Shetty, Director of Instruction (Fish)	Fisheries College, U.A.S., Mangalore.

Science & Technology Promotion Programmes of Department of Science & Technology

Introduction

A principal activity of the Department of Science and Technology (DST) is the coordination and promotion of S&T activities in several frontier and newly emerging areas of science and technology. This is done through several programmes/schemes implemented in a coordinised manner by the Science & Technology Promotion (STP) Division of DST. The salient features of the programme operated by STP Division are given below. Scientists and engineers are invited to make full use of the opportunities being provided under these pragrammes....

1. SERC & GRC Schemes for Research Support

The Science & Engineering Research Council (SERC) scheme and the General Research Scheme (GRS) of the department support time bound research projects usually of three years duration in areas which normally do not come under the direct purview of agencies like ICAR, ICMR, UGC, CSIR, etc., and Departments like Atomic Energy, Electronics, Environment, Ocean Development and Space. The objectives of the SERC and GRS schemes are....

(1) SERC: To support frontline research in emerging areas of science and engineering and in interdisciplinary fields. Research programme should be capable of making a significant impact on the scientific scene.

(2) GRS: To provide general research support to scientists on broad basis irrespective of institutions or areas of work so that they would not have to look for assistance from abroad, particularly under specific foreign currency programmes.

2. Thrust Area Programmes (TAPs)

The SERC scheme also encourages research in the identified Thrust Areas through a support mechanism which is more flexible and comprehensive than the one followed for individual research projects. New activities to be supported in Thrust Areas are:

(i) Coordinated research through Thrust Area Programme (TAP)
(ii) Setting up of Research Core Groups or Units
(iii) Training Programmes in identified areas of research, involving Young Seientists
(iv) Setting up of Support Facilities for research.

TAPs include major research programmes to be undertaken by Indian Scientists from different institutions in a coordinated manner, to enable the creating of a significant impact on the Scientific Scene.

**Note: Thrust Area Booklets in Life, Chemical, Physical & Engineering Sciences are separately available.

3. Intensification of Research in High Priority Areas (IRHPA)

This scheme is designed to provide a major conscious support to a few areas of research that have high priority from the viewpoint of advances in fundamental science or can be of great significance for national development. Intensive research in such areas of high priority is promoted by the following mechanism:

(a) Building up of a core group around highly competent Scientist.

(b) Supporting major national R&D programmes involving several institutions and agencies.

(c) By establishing specialised facilities critically required for carrying out research in high priority areas at the national level.

The mechanism of funding under IRHPA is closely related to SERC.

4. Promotion of Scientific Interest in Youth

To encourage involvement of young scientists (approximately 18-35 years age group) in the national S&T development process and to promote their interest in science, the following activities are supported under the Scheme:

(1) Small research and development projects and feasibility studies to promote scientific interest in youth.

(2) Organisation of seminars/symposia on subjects relevant to the promotion and encouragement of scientific interest in youth.

(3) Travel grants to young scientists for attending Training Courses, Summer/Winter Schools in India and abroad.

(4) Publications aimed at promoting scientific interest in youth.

5. Assistance to Professional Bodies and Science Academies

The DST has so far been providing limited support to the professional bodies in the field of Science & Technology and to Science Academies (hereafter called societies). A new scheme has been drawn up for specific provision of financial support to the societies in a manner which will enable these

to take on the extended responsibilities of creating a cohesive integrated scientific community through arranging regular meetings and conferences, publishing high quality journals, encouraging meaningful discussions, organising Science exhibitions etc. in a coordinated manner.

6. Support for Seminars & Symposia in Science & Technology

Financial support under the Scheme is provided organising Conferences and Seminars as well as for publishing their proceedings.

7. Partial Financial Support for Participation in International Conferences

Partial Financial Assistance towards travel is provided to Scientists for atttending international Conferences/Seminars/Workshops etc. The scientists should have an accepted paper for oral presentation in the Conference and/or an invitation to deliver a talk. The Indian National Science Academy (INSA) is already providing such support for Conferences sponsored by International Council of Scientific Unions (ICSU); the support from DST is therefore restricted to only non-ICSU conferences.

8. Futures Research

The objectives of the scheme are to promote research studies on quantitative modelling on various economic and commodity sectors, to examine existing ones and new policy instruments needed in future to foster economic growth through applications of S&T, and also to generate, through seminars and workshops, awareness to application of anticipatory techniques.

9. Scheme for Development of Scheduled Castes and Scheduled Tribes in Science & Technology Areas

This scheme is for the promotion of Technology for occupations engaging Scheduled Castes, Scheduled Tribes, landless labour and linked occupations. It focusses attention on an area of work requiring a special effort not available under the existing ongoing schemes. In particular, under this Scheme, it is proposed to support specific surveys to identify areas and the required technologies, formulate and implement projects to generate the same and promote programmes for field applications and proto-type development.

10. Science & Technology for Women

This Scheme has two major aspects....first relates to the role of Science and Technology in improving the life, working conditions and opportunities for gainful employment for women and the second to the contribution that women can make to the development of S&T and its application.

Under the scheme, it is proposed to formulate an All India Coordinated Project on Development of Technologies to benefit women in general (in reducing drudgery, increasing productivity in their areas of work, opening up of new vocations for them etc.).

11. State Councils on Science & Technology

This Scheme was initiated to catalyse the setting up of State Councils on Science & Technology. The main role of these Councils is to act as focal points in the States for Planning, Coordinating, promoting S&T activities within the State.

12. Regional Sophisticated Instrumentation Centres (RSICs)

The RSICs provide sophisticated instrument & equipment facilities to scientists from educational institutions, R&D Laboratories and industry on nominal charges. Scientists & Engineers are requested to make full use of these opportunities being provided under the DST programmes for S&T promotion.

Seven such centres have been established and are operational at:

(1) Indian Institute of Technology, Bombay
(2) Indian Institute of Technology, Madras
(3) Bose Institute, Calcutta
(4) Central Drug Research Institute, Lucknow
(5) Panjab University, Chandigarh
(6) North Eastern Hill University, Shillong
(7) Nagpur University, Nagpur

(Note : Detailed booklet is separately available)

For details and application forms please contact :

Adviser, Science & Technology Promotion Division
Department of Science & Technology
New Mehrauli Road
New Delhi-110 016
Telephone : **662260**
Telex : **031-2096 DST IN**
Telegram : **SCIENCTECH**

ADMISSION NOTICE

BHOPAL UNIVERSITY

BHOPAL-462026

DEPARTMENT OF COMPUTER SCIENCE AND APPLICATIONS

(SESSION : 85-86)

Applications are invited for the admission to Post-B.Sc. Diploma Course in Computer Science & Applications. Admission to this course is based on (i) academic record, (ii) entrance test, and (iii) interview. The intake of students agreed to the above course is upto 30 seats. At least 1/3rd of the admissions will be made from outside Madhya Pradesh according to the U.G.C. guidelines. Entrance test will be conducted at Bhopal University, Bhopal. The aim of the test is to find out individual's aptitude in computer discipline and logical reasoning.

Duration : One academic year=3 terms x 15 weeks/term=45 weeks.

Eligibility : Minimum 60% marks (55% for SC/ST) in B.A./B.Sc./B.E. with Mathematics/Statistics as one of the major subjects.

The Scheduled Caste/Tribe will be given relaxation of maximum upto 5% marks on the total of the above three criteria.

In addition to the Bachelor's Degree, candidates holding first class Postgraduate degree in relevant subject will be given weightage of 5%.

Candidates should satisfy themselves that they are eligible for admission to the course. If at any stage, it is found that a candidate does not satisfy the eligibility conditions or the information furnished in the application is incorrect, or his progress is not satisfactory, the University has all rights to cancel his/her admission.

Prescribed application forms can be obtained from the office of Head of the Department by sending a written requisition accompanied by a crossed I.P.O. of Rs. 5/- payable to the Registrar, at Bhopal University post office; and a self addressed envelope of size 23cm x 10cm affixed with stamps of 70 paise only. Complete application forms alongwith a crossed I.P.O. of Rs. 10/- (Rs. 4/- for SC/ST) payable to the Registrar, Bhopal University post office, must reach the Head of the department latest by **15th May, 1985.**

Date of Entrance Test and Interview : 7th July, 1985 at 11.00 a.m. (Sunday)

M. N. Bhouraskar
REGISTRAR

INDIAN INSTITUTE OF TECHNOLOGY

KANPUR

NOTICE FOR ADMISSION TO Ph.D. & M.Sc.

Admission of students will be made for the session 1985-86 commencing on 23-7-85 in the following Post-Graduate Programmes at IIT Kanpur. More detailed information is given in the Information Brochure which will be sent alongwith the application form.

DOCTOR OF PHILOSOPHY (Ph.D.)

Programmes are available in Engineering in the following disciplines:

- **Aeronautical Engineering**
- **Chemical Engineering**
- **Civil Engineering**
- **Computer Science & Engineering**
- **Electrical Engineering (including Electronics)**
- **Mechanical Engineering**
- **Metallurgical Engineering**
- **Industrial & Management Engineering**
- **Materials Science**
- **Nuclear Engineering & Technology**

Other disciplines in Science and Humanities & Social Science will be advertised separately

MINIMUM QUALIFICATIONS : A high Second Class Master's Degree or equivalent in the respective or allied areas.

SCHOLARSHIP : Rs. 1,200/- per month to all the selected candidates.

MASTER OF SCIENCE (M.Sc.)

Programmes are available in the following disciplines:

- **Chemistry**
- **Mathematics**
- **Statistics**
- **Physics**

DURATION : Two years (i.e., four semesters)

MINIMUM QUALIFICATIONS : B.Sc./B.A. in appropriate areas.

SCHOLARSHIP

Rs. 170/- per month (plus freeship) for 25% of the candidates. Freeship for an additional 10% candidates. Two scholarships of Rs. 400/- per month each are also given by the National Board of Higher Mathematics for the Mathematics M.Sc. programme. SC/ST **STUDENTS** are given scholarship of Rs. 185/- (plus freeship).

GENERAL INFORMATION

1. More information about the areas of study and the eligibility of candidates with different backgrounds will be supplied with the application form.

2. (a) A selected number of candidates for each of the programmes will be called for interview at IIT Kanpur. The candidates may have to take a test also.

(b) The candidates called for Ph.D. programmes will be paid to and fro second class railway fare; however, candidates for M.Sc. programme will not be paid railway fare.

3. Fifteen percent of the seats are reserved for **Scheduled Caste** and 7½% for **Scheduled Tribe** candidates and they can apply irrespective of their Class/Division in their qualifying examination.

4. Ph.D. students may be required to assist in the teaching/departmental work to the extent of six hours per week.

5. Admission of external candidates, sponsored candidates and part-time candidates are also available in Ph.D. programme. However, they are not eligible for Institute Scholarship. Details are available on request.

HOW TO APPLY

1. Candidates who possess the qualification outlined (including those who are appearing/have appeared/will be completing their qualifying examinations not later than JULY 1985) may send a requisition for application on plain paper.

2. Application forms together with detailed instructions including eligibility conditions etc. for admission to each programme of study can be had either personally from the Office of Academic Section or through post by sending request alongwith a self-addressed stamped envelope (Rs. 2.50) of the size 28cm x 13cm to the Assistant Registrar (Academic) Indian Institute of Technology, Kanpur-208016, the intended programme duly superscribed on the envelope.

3. Those who wish to apply for admission to more than one programme/department should send separate envelope with necessary postage stamps.

The candidates should fill up the application forms carefully following the directions given in the application form/information brochure.

NOTE : Incomplete applications without the required information/enclosures will not be considered.

Last date for the receipt of completed application form: May 20, 1985.

Workshop on Foundation Courses at Jammu Varsity

A University Grants Commission Workshop on Foundation Courses was organized by the Department of English, University of Jammu from March 25 to March 29, 1985. The Workshop was the first of its kind ever organized in any university of the country and was inaugurated by Shri A.M. Naik, Hon'ble Minister for Education, Govt. of J&K State, on March 25, 1985 at the new campus. Prof. M.R. Puri, Vice-Chancellor, University of Jammu, while welcoming the Chief Guest and the delegates underlined the need for imparting a value-oriented education in all the disciplines. Three distinguished academicians, Padam Bhushan B.M. Udgaonkar from the Tata Institute of Fundamental Research, Bombay, Prof. Ram Joshi, former Vice-Chancellor, Bombay University, and Prof. (Mrs) Nirmal Mukherjee, Chairman, Department of English, Panjab University, Chandigarh participated in the deliberations and contributed to the proceedings with their Lectures on different aspects of imparting a value-based education. The Department of Higher Education, Govt. of J&K, deputed two teachers from each college affiliated to the University of Jammu to participate in the Workshop. Papers dealing with the need and problems of value-oriented education were presented by the participants.

The following specific recommendations emerged from the deliberations of the Workshop:

(1) Post-graduate Department of English, University of Jammu is among the three institutions in the country which is actively engaged in value oriented education; therefore, the U.G.C. may recognize it as the Centre of Higher Education for Value-oriented Education for training special fellows from the different parts of the country.

(2) As accepted by the U.G.C., the University of Jammu may approach the U.G.C. for 100% assistance in continuing and implementing value-oriented courses.

(3) Foundation Course be introduced as one of the elective subjects at the college level in the University of Jammu from July 1986;

(4) Various disciplines which are amenable for absorbing the components of Value Oriented Education may the engaged in this task.

(5) Till a period other disciplines succeed in absorbing the objective of Foundation Courses with those of their subjects, M.A. English second class with fifty percent marks be the minimum qualification for the appointment of the teachers of Foundation courses.

(6) A cell of Value Oriented Education be created in Directorate of College Development, University of Jammu, to monitor the programme.

Adult education project inaugurated at PAU

Inaugurating the first project under the Adult Education Programme at the Punjab Agricultural University recently Dr. S.S. Kishanpuri, Additional Director of Adult Education, Punjab said that according to the 1981 Census Report, there were 56 per cent dropouts in the State at the primary stage of education. He further said that with this alarming rate of dropouts the number of uneducated youth in the age group of 15 to 35 years would swell to 33.19 lakh by the year 1990. An Adult Education Programme was the only solution of the problem, he added.

The project has been launched by the Punjab Society of Adult Education, a voluntary organization, in collaboration with the State Department of Education and the Home Science Education and Extension Department of PAU in 30 centres of Mangat block of district Ludhiana.

Dr Kishanpuri said though the Punjab State was economically very progressive, educationally it was still backward. He said that under the Adult Education Programme, education was imparted to 1.15 lakh persons against a target of one lakh during 1984-85. He further said that there was an urgent need for the expansion of this programme to educate 33.19 lakh uneducated youths by 1990. It was very difficult to enroll the male members for this programme due to the heterogeneous nature of the group having divergent types of occupations which makes it very difficult to find a convenient and common leisure time for all. Due to homogeneity in household chores the problem of enrolment was not so acute in case of women. He pointed out that under the Adult Education Programme, education for 600 hours was imparted to the enrolled persons in a phased manner to make them literate permanently. He laid stress for conducting action research and evaluation research for ongoing Adult Education Programme to make further improvement in it on the basis of research findings.

Dr Ranjit Singh, Secretary-cum-Treasurer of the Punjab Society of Adult Education said that 30 centres were started in Mangat block in which more than 700 persons were getting this education. Depending upon the resources and material the programme would be further expanded. Involving the PAU staff in such type of voluntary services for the cause of education of society was a great satisfaction for them, he added.

An exhibition showing the Audio-Visual Aids and the farm and home scale projects undertaken as a part of this education drive was also organized on this occasion.

Extension lectures in Gorakhpur University

Professor Fred R. Dallmayr of the University of Notredame, Indiana, USA, delivered three lectures in the department of

Political Science, Gorakhpur University, recently.

The first lecture was on the "Current continental (European) perspectives in the study of politics", in which Prof Dallmayr outlined the various strands of German thought which have influenced the course of political thinking in the USA. He mainly spoke of logical positivism, phenomenology, critical theory and structuralism and post-structuralism. Logical positivism, he said, though once an extremely powerful intellectural force in modern thought, was unable to justify itself scientifically.

Prof. Dallmayr traced the evolution of phenomenology through its various stages. He briefly outlined the critical theory of Adorno, Horkheimer and Habermas and ended with an emphasis on Foucault's work.

Prof. B.M. Shukla, Vice-Chancellor, presided over this meeting.

The second lecture by Prof. Dallmayr was concerned with the specific issues of empiricism and hermeneutics. He deployed the resources of post-positivistic philosophies of sience as well as of the Western approach and phenomenology and hermeneutics to attack the foundations of the empirical political science.

He pointed out the limitations of subject-object, mind-matter, nature-spirit, and necessity-freedom approach. The meeting was presided over by Prof. Raghubir Singh, Head of the Department of Political Science.

Prof. Dallmayr's last lecture was on "Heidegger, Holderlin Politics". Giving a lucid exposition of Heidegger's interpretation of Haderlin's two poems, "Germania" and "The Rhine", he criticised the sociological-psychological and biographical interpretations of poetry and observed that poetry has an ontological status. Philosophy and poetry are closely related, he said.

Students group from semester at sea programme at Gujarat Vidyapith

A group of students from Semester at Sea programme of University of Pittsburg, consisting of Miss Lisa Jacobson of Florida, James Dobis of Massachusettes, Sean Burke of San Diego and Susan Broccol visited the Gujarat Vidyapith to apprise themselves about Gandhian Education programmes. They were a part of 350 students of floating university on ship S.S. Universe which is on a World voyage from 12th February to 23rd May 1985. The ship had landed at Bombay for one week on its way to China. The journey started from Florida via Spain, Greek, Turkey through Arabian Sea to Kerala, Bombay and will now go to China, Japan and back to U.S.A. through the Pacific.

These students were welcomed by the Vice-Chancellor, Prof. Ramlal Parikh, who stated that education is a living process which can flower very well in such natural environment like University of Sea. Gandhiji always pleaded for a close link between learning and natural environment. The Gujarat Vidyapith also proposes to conduct such an experiment of floating learning by organizing a one-month learning session on a ship from Kandla to Cochin on western coast of India.

The S.S. Universe, hired by U.S. University of Pittsburg, has, besides 350 students, 50 Professors, a big library, a Science Laboratory, all installed on it. The students stated that it was a most exciting experiment of learning through living with nature. The visiting students evinced great interest in Gujarat Vidyapith's programmes of Peace Studies, Gandhian Thought, Studies in Non-violence, Bio-gas etc.

Dr. Appa Rao takes over as VC, APAU

Dr. A. Appa Rao, who took over on 14th March as Vice-Chancellor of the Andhra Pradesh Agricultural University, Hyderabad, was born on July 1, 1926. He obtained his B.Sc. (Agri) degree in 1948 from the University of Madras standing 1st class first and obtained PhD in 1957 from the same university. He did post-doctoral work for one year at Kansas State University, USA under USAID. He was elected as a full member of the Sigma Xi and the Gamma Sigma Delta societies.

Dr. A. Appa Rao

Dr. Rao was Lecturer from 1957 to 1966; Professor of Plant Pathology from 1967 to 1973 and Director of Research since 1973. As Director of Research he was responsible for planning, coordinating, controlling and executing the research policies and programmes of the university in the field of Agriculture, Animal Husbandry, Fisheries, Farm Forestry and Home Science. He was also Principal of the College of Basic Sciences from 1970-73 and also acted as the Vice-Chancellor of the University for three months in 1981.

Dr. Rao has been a member of various academic, professional and administrative committees/bodies connected with agricultural education, research, extension and administration. He has about 30 papers to his credit, written mostly in the field of plant pathology.

Dr. Rao is widely travelled and has participated in various international seminars and workshops held in Philippines, Thailand, Malaysia, Sri Lanka and Indonesia. He also worked as Agriculturist, World Bank, New Delhi with responsibilities for Agricultural Research and Research Extension from January 1982 to March, 1985. ☐

Yoga training camp at Pantnagar

An exhaustive Yoga Training Camp has been organised by the new Education Department of the Pantnagar University for the students and campus community from April 15 to 25, 1985 under the guidance of H.H. Sri Swami Adhyatmananda Ji Maharaj who had his initiation from H.H. Sri Swami Chidananda Ji Maharaj of the Divine Life Society, Rishikesh. Prior to his taking sanyas, Swami Ji did his Ph.D. in Turbine Engineering from West Germany and also served in that country as Engineer. He also was honoured by the then President of India, Late Shri Sarvapalli Radhakrishnan Ji for collecting Rs. one lakh for the Floodhit victims of the area by dancing and music. The President conferred the title of Bharat Natya Raj on him. He is also a regular Yoga Instructor at the Lal Bahadur Shastri National Academy of Indian Administration, Mussoorie and imparts training to IFS/IAS and the other probationary-officers there in Yoga.

Adult education and extension programme at AMU

A meeting of the Adult Education and Extension Programme, held at Aligarh Muslim University was presided over by the new Vice- Chancellor, Syed Hashim Ali on 13th April, 1985.

Shri Surendra Singh Chauhan, Minister of State, Uttar Pradesh committed to guide and strengthen the adult literacy programme to eradicate illiteracy completely by 1990 in the district, by making it a "Mass-Movement" through the involvement of the entire Government Developmental Agencies in collaboration with A.M.U.

Shri Syed Hashim Ali assured the Minister of his full cooperation in this gigantic task of wiping out illiteracy completely in the district, covering about 16 lakhs of persons, mostly belonging to weaker sections, scheduled castes, women and Muslims.

News from Agril. Varsities

ICAR chief lauds Punjab's farm progress

Dr. N.S. Randhawa, Director-General, Indian Council of Agricultural Research while addressing the Annual Convocation and Prize Distribution Function of the College of Agriculture of the Punjab Agricultural University said that the farmers of Punjab had made phenomenal advances in foodgrain production by massive application of farm technology developed by this University. He said that during the last year Punjab had contributed about 62 percent of wheat and 52 percent of rice to the Central food reserve. Dr. Randhawa hoped that a production level of 95 lakh tonnes of wheat would be realised during the current season. Dr. Randhawa said that it was possible to further improve the performance of production and productivity per unit area. Dr. Randhawa said that 7 tonnes of paddy and 4 tonnes of wheat per hectare could be produced by following improved practices of crop husbandry and soil management since the yield levels of 9 tonnes of paddy and 6.5 tonnes of wheat per hectare had already been achieved in the experiments conducted on the farmers' fields in Punjab.

Dr. Randhawa stressed the need for producing other commodities like oilseeds and pulses which were in great demand in the country. This could be possible if the farmers were provided with new high yielding varieties of these crops with suitable farm technology by the agricultural experts.

Dr. Randhawa said that solar energy, along with bio-gas technology, could provide a considerable amount of the energy needed for enhanced productivity. The gobar gas technology based on animal refuse and cellulosic waste like paddy straw (which is being burnt and is causing environmental problems) needs more intensive attention. In addition to legumes, there were several plants, including algae, which can become important sources of energy. Dependence on chemical fertilizers could be reduced by an integrated nutrient supply system, which included an optimal mixture of chemicals as well as organic manures—including green, manure grown in a non-competitive manner, blue-green algae, azolla and non-symbiotic nitrogen-fixing organisms and legumes which fix atmospheric nitrogen.

Congratulating the young graduates Dr. Randhawa said that the area of choice for a graduate of agriculture was unlimited since very few of them would go back to the farms. He hoped that whichever pursuit the fresh graduates followed in life they would remain rooted to the soil.

Dr. Sukhdev Singh, Vice-Chancellor of the PAU who presided over the function awarded 128 B.Sc. (Agri.) and 18 B.Ed. degrees in addition to four Gold Medals and six Merit Certificates.

Dr. Sukhdev Singh also felicitated Dr. N.S. Randhawa with a scroll and a memento on behalf of the University.

UNDP centre for PAU

Dr. N.S. Randhawa, Director-General of Indian Council of Agricultural Research said recently that the Department of Soils of Punjab Agricultural University had been selected for setting up a Centre of Advanced Studies in Soils under the United National Development Programme (UNDP). Dr. Randhawa appreciated the outstanding research work of the Faculty of Soils which had been acclaimed at national and international levels.

Dr. Randhawa was formally inaugurating the three-storeyed Soil Science Laboratories built on the campus at a cost of Rs. 60 lakhs. The building has a covered area of 72,000 sq. ft and accommodates offices, laboratories and a museum.

Dr. Sukhdev Singh, the Vice-Chancellor of PAU who presided over the Inauguration Function said that chemical fertilizers had greatly helped in increasing the crop yield, but these needed to be used judiciously being a costly input.

Dr. S.S. Prihar, Head of the Department of Soils told that out of seven Rafi Ahmed Kidwai Memorial Prizes, six have been won by the Soil Scientists of this University.

Sports News

STS scholarships for meritorious students of universities and colleges

Under the National Sports programme 100 National Level Scholarships are awarded every year to the universities/colleges students who have secured first or second position in a Junior/Senior National Championship or 1st place in the All-India Inter-University Championship. The value of each scholarship is Rs. 100/- per month.

Application forms for award or sports scholarship under this scheme and other particulars can be obtained from the Director, Netaji Subhash National Institute of Sports, Patiala-147001 by sending a self addressed 23cmx 10cm envelope. Last date for the receipt of completed application on the prescribed form through proper channel is 31st July, 1985.

A proposal for increasing the number and value of such scholarships for the year 1985-86 is also under active consideration.

Combined Universities Hockey Team for Jr. Nationals

The Combined Universities Hockey Team to participate in the Jr. National Hockey Championship to be held at Imphal (Manipur) from May 17 to 26, 1985 has been selected after holding selection trials at Aligarh from April 20 to 21, 1985. The following are the members of the team:

1. Mr. Nand Kishore Rai, A.M.U., 2. Mr. Majahid Jafri, Bhopal, 3. Mr. Ashu Narula, Agriculture University, 4. Mr. Charanbit Singh, Punjabi University, 5. Mr. Khalique Ahmad, Bhopal, 6. Mr. Puran Singh Bhandari, Meerut, 7. Mr. Mohd. Naim, Bhopal, 8. Mr. Manbir Singh, Punjabi, 9. Mr. Satwant Singh, Punjabi, 10. Mr. Manoj Singh, Bundelkhand, 11. Mr. Farhat Ali Khan, A.M.U, 12. Mr. Naveen Kumar, Delhi, 13. Mr. Harender Singh, Delhi. 14. Mr. Shahid Iqbal, A.M.U., 15. Mr. S.M. Tariq Zafar, AMU, 16. Mr. Didar Singh, GNDU, 17. Mr. Jagdev Singh, Punjabi, 18. Mr. Dimple, Punjabi, 19. Mr. Sarabjit Singh, ,Kurukshetra, 20. Mr. Aminullah, AMU.

The team will undergo training in a coaching camp which commenced at Aligarh from April 22 and will continue till the team reaches Imphal around May 10, 1985.

Five university Volleyball players invited for National Camp

The Volleyball Federation of India has recently released a list of Volleyball probables for the next National Coaching Camp to be held at NIS, Patiala.

Five university Volleyball players have been selected by the VFI for this Camp. Whereas Shri Sandeep Sharma from Kurukshetra University and Shri Sukhpal Singh from Panjab University, Chandigarh figure in the main list, the other three, namely, Mr. Ravinder Pal Singh-Allahabad University, Achal Tirkey-Ranchi University and Shri A. Venkit Rami Reddy—Andhra University figure in the list of stand byes.

We Congratulate . . .

(1) Shri R. Venkataraman, Vice-President of India, who has been unanimously elected as Chancellor of the Gandhigram Rural Institute.

(2) Dr. Nagendra Singh, President of the International Court of Justice, The Hague, who has been appointed as Chancellor of the Goa University.

(3) Prof. Moonis Raza who has taken over as Vice-Chancellor of University of Delhi with effect from April 23, 1985.

(4) Shri K.K. Sharma who has been appointed as Vice-Chancellor of Kurukshetra University.

(5) Dr. B. Sheik Ali, Vice-Chancellor, Mangalore University who has been appointed as Vice-Chancellor of Goa University.

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AIU Library & Documentation Services

One of the important functions of the Association of Indian Universities is to act as a clearing house of information on higher education in the country. Towards this end the AIU Library is engaged in collection building and developing instruments for the dissemination of research information. Over the years a valuable collection of books and documents on different aspects of higher education has been acquired.

The Library has also developed Bibliography of Doctoral Dissertations as an effective tool in the dissemination of research information. Retrospective bibliographies covering the period 1857-1970 and 1970-75 were the first to appear. Effective 1975, however, the bibliography is issued annually in two volumes. One volume deals with Natural and Applied Sciences while the other records doctoral degrees awarded in Social Sciences and the Humanities. In addition to the normal bibliographical details like the name of the Research Scholar, the title of the thesis, years of registration for and award of the degree, and the name of the University accepting the thesis for award of a doctoral degree, the bibliography also gives name and complete address of the supervising teacher and an availability note that seeks to inform whether a copy of the dissertation is available for consultation and use in the University Library/Department or Registrar's Office.

The columns 'Theses of the Month' and 'Research in Progress' are intended to cut out the time lag between the receipt of information and its inclusion in bibliography. Such Universities as are not sending us regular information in respect of Doctoral Theses accepted and research scholars enrolled are welcome to make use of these columns.

The Library is situated at 17-B, Indraprastha Marg, New Delhi-110002. It is open from 10 a.m. to 5 p.m. Monday through Saturday except Second Saturday.

RESEARCH IN PROGRESS

A list of Research Scholars Registered for Doctoral Degrees of Indian Universities

SOCIAL SCIENCES

Psychology

1. Agrawal, Anita. *Cultural experimental antecedents to development*. BHU, Varanasi. Dr. R.C. Mishra.

2. Anu Kumari. *A study of drug-abuse among students in relation to personality, parental attitudes and socio-economic status*. Pb U, Chandigarh. Dr. (Mrs.) Prem Verma and Dr. (Mrs.) P. Vasudeva.

3. Dhaliwal, Varinder. *An experimental study of short term and long term memory as determined by distribution of practice, age, sex and sense modalities*. Pb U, Chandigarh. Dr. Jitendra Mohan.

4. Gopal Singh. *Organizational behaviour Stress and coping machanism*. BHU, Varanasi. Dr. Anand Prakash.

5. Jain, Madhuri. *A cross sectional study of emotional development*. BHU, Varanasi. Prof. M.S. L. Saxena.

6. Kapila, Neeta. *A study of altruism, personality, achievement motivation and adjustment of doctors*. Pb U, Chandigarh. Dr. Jitendra Mohan.

7. Mishra, Anupam. *Memory organization as a function of contextual change*. BHU, Varanasi. Dr. R.C. Mishra.

8. Pal, Anita. *A study of competition and cooperation in high school children as related to personality and parental orientation*. Pb U, Chandigarh. Dr.(Mrs.) P. Vasudeva and Dr. (Mrs.) Prem Verma.

9. Rai, Ajai Kumar. *Non-verbal communication of affect and psychopathology*. BHU, Varanasi. Dr. Manas Kumar Mandal.

10. Rama Kumari. *A study of aggression in relation to certain familial intellectual and demographic variables*. Pb U, Chandigarh. Dr. (Mrs.) Prem Verma.

11. Razdan, Ruchira. *A comparative study of personality, adjustment and values of different types of criminals*. Pb U, Chandigarh. Dr. (Mrs.) Vidhu Mohan.

12. Siddiqui, Raihana. *Experimental study on non-verbal communication*. BHU, Varanasi. Dr. Manas Kumar Mandal.

13. Singh, Bharti. *Stress management*. BHU, Varanasi. Dr. A.P. Singh.

14. Singh, Hari Shankar. *Occupational stress and coping style of a personnei power plants*. BHU, Varanasi. Dr. O.N. Singh and Dr. A.K. Srivastava.

15. Singh, Mangala Prasad. *Activation and retention*. BHU, Varanasi. Dr. C.B. Dwivedi.

16. Singh, Navendu Prakash. *Supervisory behaviour: Stress and coping mechanism*. BHU, Varanasi. Dr. A.P. Singh.

17. Singh, Vasudha. *Stress and coping resources in working and non-working women*. BHU. Varanasi. Dr. Reeta Verma.

18. Sinha, Sanjay. *A study of coping stratcgies of the employees*. BHU, Varanasi. Dr. A.K. Srivastava.

19. Srivastava, Kiran. *Job involement and work motivation of teachers of different levels*. BHU, Varanasi. Prof. M.S.L. Saxena.

20. Tiwari, Vijay Kumar. *Organisational behaviour: Stress and coping mechanism*. BHU, Varanasi. Dr. Anand Prakash.

Sociology

1. Gupta, Sudesh Kumar. *Social correlates of participation in international sport*. Pb U, Chandigarh. Dr. A. Mahajan.

2. Gurpreet Pal. *Blacksmith: A study of an occupational group*. Pb U, Chandigarh. Shri P.N. Pimpley.

3. Jain, Neelima, *Behavioural dimensions of population education and sex education: A comparative study of youth in Panjab and Himachal Pradesh universities*. Pb U, Chandigarh. Dr. S.R. Mehta.

4. Mishra, Trilochan. *Youth education and rural development with special reference to Cuttack District in Orissa*. HS Gour, Sagar. Dr. N.K. Gurha.

5. Ramji Singh. *Yuva akankha evam badalte mulya.* BHU, Varanasi. Prof. G.S. Nepali.

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7. Singh, Binod Kumar. *Behaviour geography: Emphasis on environmental psychology*. BHU, Varanasi. Dr. R.P.B. Singh.

8. Singh, Gayatri. *Transformation of rural habitat*. BHU, Varanasi. Dr. N. Kaushik.

9. Singh, Jai Prakash. *Environmental studies*. BHU, Varanasi. Dr. V.K. Kumra.

10. Singh, Madhuri. *Urban population*. BHU, Varanasi. Dr. T.D. Singh.

11. Singh, Onkar Nath. *Regional planning*. BHU, Varanasi. Dr. Onkar Singh.

12. Tiwari, Mahendra Nath. *Towns and town planning of Garhwal Cities*. BHU, Varanasi. Dr. K.K. Dubey.

13. Varma, Suchitra. *Rural development planning*. BHU, Varanasi. Dr. V.R. Singh.

History

1. Adhikari, Paramesh Kanth. *The development of art in Nepal*. BHU, Varanasi. Prof. Lallanji Gopal.

2. Adhikari, Shibendra Singh. *Archaeology of Nainital District*. BHU, Varanasi. Dr. P.C. Pant.

3. Bharadwaj, Radha Krishna. *Portraits in stone and metal, from earliest time to medieval period*. BHU, Varanasi. Dr. T.P. Verma.

4. Chaudhary, Manju. *The role of women in freedom movement in the Panjab*, 1919-47. Pb U, Chandigarh. Dr. R.J. Malhotra and Dr. S.L. Malhotra.

5. Dubey, Jagnarain. *Jain sahitya ka sanskritik adhyayan*. BHU, Varanasi. Dr. L.K. Tripathi.

6. Gupta, Nina. *Economic life of Northern India*, c500 *A.D.*—750 *A.D.* Pb U, Chandigarh. Dr. J.K. Sharma.

7. Harikesh Singh. *Indian socialist movement from* 1934-35 *to* 1984-85. BHU, Varanasi. Dr. J.P. Mishra.

8. Kamavisdar, Sharad Shankar. *Some aspects of Ancient Indian chemistry*. BHU, Varanasi. Dr. Jyotir Mitra and Dr. Nishar Ahmad.

9. Karwal, Sukhinder Kaur. *Women is Kautilya's Arthshastra: A socio-economic analysis*. Pb U, Chandigarh. Dr. S.N. Chopra and Dr. A. Mahajan.

10. Khare, Awadh Behari. *Art and architecture*. BHU, Varanasi. Dr.(Mrs.) K. Gopal.

11. Mishra, Awadhesh Kumar. *Agrarian relations in Uttar Pradesh*, 1901-1951. BHU, Varanasi. Dr. A.S. Singh.

12. Roy, Jahnawi Shekhar. *Purva madhyakalin Uttar Bhartiya abhilekhon ka sanskritik adhyayan*. BHU, Varanasi. Dr. P.N. Singh.

13. Sachin Nath. *Narad-smriti : A study*. BHU, Varanasi. Dr. (Mrs.) M. Jauhari.

14. Saraswathamma, Nakka. *Upvas in Ancient India*. BHU, Varanasi. Dr. S.N. Tripathi and Dr. J.N. Tewari.

15. Sharma, Hari Prakash. *Bhartiya sanskriti mein ayurveda ka sthan*. BHU, Varanasi. Dr. L.D. Dwivedi and Dr. P.N. Singh.

16. Sharma, Neeru. *Ayurveda sahitya mein pratibimbit lok dharma*. BHU, Varanasi. Dr. M. Prasad.

17. Sharma, Vandana. *Kashi mein lekhan parampara: Ek lipi shastriya adhyayan*. BHU, Varanasi. Dr. M. Prasad.

18. Singh, Arun Kumar. *Holy places in Ancient India*. BHU, Varanasi. Dr. L. Rai.

19. Singh, Dinesh Kumar. *Public finance in Ancient India*, 700-1200 *A.D.* BHU, Varanasi. Dr. L. Rai.

20. Singh, Gandhiji. *Bihar kee prantiya rajniti aur sampradayikata*. BHU, Varanasi. Prof. J.N. Vajpai.

21. Singh, Kanti Prabha. *Rajkiya Sangrahalaya Lucknow mein sangrahit apradhan Hindu Deo pratimayon ka shastriya adhyayan*. BHU, Varanasi. Dr. Lallanji Gopal.

22. Singh, Udai Bhan. *Brihaspati Smriti ka sanskritik adhyayan*. BHU, Varanasi. Dr. P.N, Singh.

23. Sinha, Shashi. *India's freedom movement*. BHU, Varanasi. Dr. Raja Ram.

24. Srivastava, Ashok Kumar. *Prachin Bharat mein trivarge kee dharna: Dharma artha aur kama*. BHU, Varanasi. Dr. M.S. Shukla.

25. Sushila. *Uttar Pradesh mein swatantrata-sangharsh*. BHU, Varanasi. Dr. A. Chattopadhya.

26. Upadhyaya, Kala. *Antayeshthi: Ek itihasik adhyayan*. BHU, Varanasi. Dr. P.C. Pant.

27. Verma, Ranjana. *Indian national movement*. BHU, Varanasi. Dr. Aruna Sinha.

THESES OF THE MONTH

A list of Doctoral Theses Accepted by Indian Universities

SOCIAL SCIENCES

Library Science

1. Navalani, K. *Manpower management in university satisfaction*. Kar U, Dharwad.

Psychology

1. Bhattacharyya, Buddhadeb. *An inference on the mathematical model of life adjustment attitude dispositions of Bengalee students of Calcutta school leaving class*. U Calcutta.

2. Chaudhuri, Binata. *Psycho-social correlates of skin disease*. U Calcutta.

3. Gulati, Anita. *A comparative study of academic achievement in relation to personality, self perception, adjustment and values*. Pb U, Chandigarh.

4. Massey, Rajiv R.K. *A study of managerial stress with special reference to certain psychological needs*. IIT, Kharagpur.

5. Mehra, Kul Bhushan. *Relationship of job involvement to perceived importance satisfaction of employee needs and background factors*. IIT, Delhi.

6. Mohapatra, Sadasiva. *Behavioural changes in albino rats under stress*. Utkal U, Bhubaneswar.

7. Nirmala Devi, P. *Influence of authoritarianism, rigidity and their interaction on verbal paired associate learning*. Andhra U, Waltair.

8. Parmjit Kaur. *Standardisation of personality questionnaire on Indian students*. Pb U, Chandigarh.

9. Sahney, Surjeet Pal. *A cooperative study of personality adjustment and values of delinquents and non-delinquents*. Pb U, Chandigarh.

10. Saxena, Sneh. *Intellectual and personality variables as predictors of vocational maturity*. Pb U, Chandigarh.

11. Srivastava, Mridula. *Hostility and religions of college students and association of these personality variables with mode of resolving conflicts*. Bihar U, Muzaffarpur.

12. Tiwana, Manjit. *A study of personality, self perception, values and alienation of creative writers*. Pb U, Chandigarh.

13. Verma, Janak. *A study of the differences in the personality patterns of high and low creative adolescents in schools as measured through Rorschach*. Meerut U.

Sociology

1. Joshi, K.G. *A sociological study of migrations and mobility in urban Karnataka: A case study of Raichur*. Gulbarga U.

2. Nischal, Surendra. *Social correlates of effective leadership: A study of white collar workers union leaders in role perspective*. Pb U, Chandigarh.

3. Patne, Shobha Ramlal. *Vibhinn samajik satron ke parivaron mein samajik-aran ke sapeksh pratiman: Ek samaj shastriya adhyayan*. Nagpur U.

4. Subba, Tanka Bahadur. *Caste, class and agrarian relations in the Nepalese society of Darjeeling and Sikkim*. NBU, Rajarammohunpur.

5. Xavier, Machineni Sreedevi. *Progressive telugu literature and Telangana Peasant Movement: An exploration in sociology of literature*. IIT, Delhi.

Social Anthropology

1. Datta, Basudeb. *Primary education in Calcutta: An anthropological appraisal*. U Calcutta.

Social Work

1. Leelamma, P.J. *Cooperatives as a strategy for rural development*. Nagpur U.

Political Science

1. Abha. *Sthaniya star per rajnaitik dalon kee bhumika, Meerut Janpad ka Samyavadi Dal: Ek adhyayan*. Meerut U.

2. Chenchukrishnaiah Chetty, K. *Tirumala Tirupati devasthanams efforts for the promotion of hinduisms : A study of the related administrative problems*. SVU, Tirupati.

3. Gurdev Singh. *Social and political thoughts of the Sikh Gurus*. Pb U, Chandigarh.

4. Manak, Shashi Kumar. *Democracy and power: A study of power elites in an Urban setting*. U Delhi.

5. Narayanaswami, K.A. *Organisation and functioning of the Police Department in Andhra Pradesh: An analytical study*. SVU, Tirupati.

6. Puri, Yogesh Kumar. *Delhi Pradesh Congress Committee*, 1952-1964. U Delhi.

7. Raghavan, R.K. *Police modernising society with special reference to problems of personnel administration in the Indian Police*. Kar U, Dharwad.

8. Rajashekhara, H.M. *Centre state relations in India: An examination of Article 356 of the Indian Constitution*. U Mysore.

9. Ramachandran Pillai, K. *Jawaharlal Nehru and his critics* 1923-1947 : *A study with reference to the ideas of Nehru, Gandhi, Subhas Chandra Bose, M. N. Roy and the communists*. U Delhi.

10. Ramayamma, S. *Role of Parliament in foreign policy making*. U Madras.

11. Rami Reddy, V. Indira. *A decade*, 1971-1980 *of municipal administration, with reference to Tirupati, Andhra Pradesh*. SVU Tirupati.

12. Raval, Munni. *Dadabhai Naoroji : A prophet of Indian Nationalism in England*, 1855--1900. Meerut U.

13. Seth, Jeevan Jyoti. *The role of United Nations in improving the status of women : Political, civil, economic and social*, 1945-1975. U Delhi.

14. Suri, Kondaveeti Chinnaya. *Agrarian movement in Andhra*, 1921-1971. JNU, Delhi.

Economics

1. Arumugam, P. *Cost and demand for secondary education in Tamil Nadu*. U Madras.

2. Ashok Kumar, Poonam. *An analysis of house-hold saving behaviour in India*. Andhra U, Waltair.

3. Chakoo, Bansi Lal. *Geonomic pattern of population in the Jammu Province, J & K State*. U Jammu.

4. Chakravarty, Shyamal. *Rural indebtedness; its nature and problems: A study of six villages in Jalpaiguri District, North Bengal* 1975-1977. NBU, Rajarammohunpur.

5. Devarajulu Naidu, C. *Economics of irrigation : A study of farm productivity income and employment under Thugabhadra Project*. SVU, Tirupati.

6. Dubey, Usha. *Madhya Pradesh ke krishi kshetra mein arth-rojgar kee samasya: Raipur Jile ka ek adhyayan*. RSU, Raipur.

7. Gogoi, Jayanta Kumar. *Migration and economic development in Assam*, 1951-1971. JNU, Delhi.

8. Jai Singh, Nisha. *Allocation of energy resources for optimum economic growth of Indian economy*. U Roorkee

9. James, D. Joseph. *Urbanisation and economic change in Tamil Nadu*. U Madras.

10. Malathy, R. *Women's allocation of time to market and non-market work: A study of married women in Madras City*. U Madras.

11. Namdeo, Laxmi. *Madhya Pradesh ke Raigarh Jile mein nimna krishi utpadakta kee samasya*. RSU, Raipur.

12. Rachpal Singh. *Farm production strategy under rained conditions for the sub-duntainous areas of the Panjab*. PAU, Ludhiana.

13. Ramarao, P.G.P. *Marketing of banking services in India, with special reference to rural areas*. Mangalore U.

14. Satwant Singh. *A study of change in structure resource use efficiency and factor shares in Panjab agriculture*. PAU, Ludhiana.

15. Shaik Galab. *Analysis of variations in infant use, output lêvels and economic efficiency in Indian agriculture: A case study of Godavari Delta Region, Andhra Pradesh*. Andhra U, Waltair.

16. Tauseef Ahmad. *Distribution and consumption of fertilisers: A case study of Meerut Division, India*. U Roorkee.

17. Vishwa Mittar. *Growth of informal sector in Panjab's urban economy: A case of Patiala City*. Pbi U, Patiala.

18. Yadav, Hanuman Singh. *Water resource availability and agricultural development in the Indian Desert*. JNU, Delhi.

Law

1. Bangia, Ramesh Kuma. *Damages and compensation for breach of contractual and other duties including conflictual problems*. Pb U, Chandigarh.

2. Indra Pal Singh. *Corporate taxation: A study of the legal and inter related socio-economic implications of taxation of companes*. Pb U, Chandigarh.

3. Puri, Madan Lall. *Child labour in India: A socio legal study*. Pb U, Chandigarh.

4. Sachdeva, Gurbachan Singh. *The Warsaw Regime of International carriage by air: A critical study*. JNU, Delhi.

Public Administration

1. Bhayna, Sahib Singh. *Organisation and working of Hrayana State Electricity Board*. Pb U, Chandigarh.

2. Vijay Rattan. *Organisation and working of the Integrated Child Development Services (ICDS) Project: A case study of Haryana*. Pb U, Chandigarh.

Education

1. Agarwal, Rup Narain. *Developing learning packages and testing their effectiveness for training of teachers and effective implementation of modern mathematics programme in elementary classes in U.P.* **D. Litt.** Meerut U.

2. Annamma, A.K. *Values aspirations and adjustment of college students in Kerala*. U Ker, Trivandrum.

3. Bhalwankar, Anil G. *A study of the effects of the expository and guided discovery methods of teaching mathematics* on the achievements of the students of different levels of intelligence. U Poona.

4. Chathley, Yoginder Paul. *An experimental study of the teaching competency at macro level as a function of training in micro skills among the prospective secondary school teachers in relation to the integration of skills and subject, areas*. Pb U, Chandigarh.

5. Chelliah, S. Navaraj. *Chadugudu songs and chadugudu games in Tamilnadu*. U Madras.

6. Dutta, Mrigendra Lal. *Education and employment of the tea garden labourers of Assam with special reference to the District of Sibsagar*. Gauhati U.

7. Gian Singh. *A study of sports facilities available in colleges and their effect on college attainment in sports*. Pbi U, Patiala.

8. Harbans Singh. *A survey of the study habits of high, middle and low achiever adolescents in relation to their sex, intelligence and socio-economic status*. HPU, Shimla.

9. Jadhav, Namdeo L. *Nasik jilhateel adivasi samajteel saikshnik pragati*. U Poona.

10. Jain, Kamal Kumar. *A study of the development of interests among the school students of Delhi in relation to certain variables*. U Delhi.

11. Kang, Gurpreet Singh. *Construction and standardization of physical education teacher effectiveness scale*. Pbi U, Patiala.

12. Mahantappa, Pattanashetti Mallikarjuna. *Effectiveness of self instructional micro teaching course in improving college teaching*. Kar U, Dharwad.

13. Manjit Singh. *Effectiveness of micro-teaching with planned integration training following summative model and microteaching without planned integration training on the general teaching competence of teacher trainees*. U Delhi.

14. Natarajan, S. *A competency based programme in teacher education curriculum*. U Madras.

15. Pandey, S.S. *A study of the socio-psychological characteristics of sociometric stre and social isolates*. Avadh U.

16. Pandian, Cynthia. *Learning styles and teaching strategies in higher education*. U Madras.

17. Panneerselvam, A. *A study of educational and occupational aspirations of parents in a chosen agricultural and industrial community in the Tiruchirapalli District of Tamilnadu*. U Madras.

18. Ramesh. *Development of objective based science curriculum and to study its efficacy in the acquisition of process skills among high school science students*. Pb U, Chandigarh.

19. Sundarasmita, Varunee. *A comparison of Kinetic Family Drawings (K.F.D.) in relation to creativity, emotional indications self concept of gifted and average elementary school children*. Pb U, Chandigarh.

Commerce

1. Arumugham, M. *A study of farm level credit management in Thondamuthur Block, Coimbatore District, Tamil Nadu*. U Madras

2. Borua, Anjan Kumar. *A survey of the plywood undertakings of Assam located in the Districts of Sibsagar and Dibrugarh*. Gauhati U.

3. Chourasia, Jagdish Prasad. *Madhya Pradesh mein cement udyog ka sangathan evam prabandh*. RDV, Jabalpur.

4. Garg, Ram Mohan. *Computer systems in cosmopolitan towns: A case study of Delhi*. Meerut U.

5. Gupta, Ved Prakash. *Role of land development bank in the agricultural economy of Haryana*. Meerut U.

6. Jain, Nirmal Chand. *Madhya Pradesh mein afim utpadan ka arthik paksha: Mandsaur Jile ke sandarbh mein*. HS Gour, Sagar.

7. Koirala, Kiran. *Rural development in Nepal: Study of the impact of agricultural modernisation programmes*. U Poona.

8. Lairenlakpam, Bino Devi. *Development and working of the Imphal Municipal Board*, 1956-1980. Mani U, Imphal.

9. Ravilochanan, P. *Impact of regulated markets on marketing efficiency in groundnut market of South Arcot District: An economic analysis*. U Madras.

Home Science

1. Kuchalan, N. Apitha. *A study of export of garments from different centres in India particularly Madras City*. U Madras.

2. Sharma, Neerja. *Identity of the adolescent girl: Rural-Urban and social class factors*. U Delhi.

INDIAN INSTITUTE OF TECHNOLOGY
MADRAS 600 036.

ADMISSION TO M.Sc. COURSES AND M.S./Ph.D. RESEARCH PROGRAMMES 1985-86

Applications are invited for admission to the following courses and programmes in the Institute, for the academic session 1985-86 commencing July 15, 1985.

M.Sc. DEGREE

in CHEMISTRY/ MATHEMATICS/ PHYSICS

by course work of 2 years duration consisting of four semesters.

RESEARCH PROGRAMMES

Ph.D.

Minimum 24 months for a full-time candidate with Master's degree and 36 months for a candidate with Bachelor's degree.

M.S.

18 months for a full-time candidate.

Aeronautical Engineering

Aerodynamics; Aerospace Propulation, Aircraft Structures; Aircraft Design.

Applied Mechanics

Structural Mechanics and Experimental Stress Analysis; Fluid Mechanics and Wind Energy Systems; Biomechanics and Biomedical Engineering; Machine Dynamics and Vibration and Noise Engineering; Lubrication Mechanics and Industrial Tribology; Condition Monitoring and Maintenance Engineering and Management.

Chemical Engineering

Catalysts and Reactors; High Polymer Engineering (including Composite Materials and Structures); Particle Technology including Mineral Processing; Instrumentation and Process Control; Computer Aided Process Synthesis and Equipment Design; Environmental Engineering; Biochemical Engineering.

Civil Engineering

Building Technology; Geotechnical Engineering; Hydraulic and Water Resources Engineering; Structural Engineering; Transportation Engineering.

Computer Science & Engineering

Analysis of Algorithms; Computational Complexity; Computer Architecture; Data Base Systems; Distributed Computing; Digital Signal Processing; Modelling and Simulation, Artificial Intelligence; Expert Systems; Information Systems, CAD for VLSI; VLSI Algorithms; Local Area Network: Software Engineering.

Electrical Engineering

Analog and Digital Filters, Communication Systems; Digital Techniques; Electro-magnetic Theory and Wave Propagation, Surface Acoustic Wave Devices, Electromagnetic Compatibility; Digital Signal Processing; Laser Communication; Microwave Engineering, Television Engineering, Image Signal Processing and Fibre Optic Communication, Semiconductor Devices and LSI Technology; Control Systems and Guidance; Measurement and Instrumentation; Networks and Systems; Power Electronics; Electrical Mechines and Drives; High Voltage Engineering; Power System Operation and Control; Computer Aided Analysis of Power Systems.

Mechanical Engineering

Combustion and Propulsion; Internal Combustion Engines and Gas Turbines; Heat Transfer and Thermal Power; Thermal Turbomachines; Refrigeration and Air-conditioning; Hydroturbomachines—Mini & Micro hydel sets—Cavitation in Pumps—Ducted Propellers—Jet Pumps; Solar Energy; Cryogenic Engineering, Production Engineering; Mechine Tools; Metrology; Machine Design; Machine Elements; Mechanisms; Friction and Wear; Fatigue Design: Mechanical Handling; Instrumentation and Control; Precision Engineering, Sintered Bearings; Microprocessor Based System design; Oil Hydraulic and Pneumatic Systems; Robotics.

Metallurgical Engineering

Metal Joining, Metal Casting, Metal Forming, Materials Technology, Physical Metallurgy, Iron and Steel Technology, Structural Metallurgy, Mechanical Metallurgy, Powder Metallurgy, Thermodynamics Metallurgical Systems; Hot Corrosion, Creep, Fatigue and Frecture Mechanics.

Ocean Engineering Centre

Marine Geotechnical Engineering; Materials for Marine Environment; Ocean Hydrodynamics and Dynamics of Floating Bodies; Ocean Structure, Ocean Energy.

Centre for Systems and Devices

Acoustical and Rader Imaging; Applied Electromagnetics and Antennas; Digital Signal Processing; Semi Conductor Devices.

HUMANITIES & SOCIAL SCIENCES (M.S.)

Industrial Engineering; Industrial Management

Candidates who possess a Bachelor's degree or equivalent in Engineering/Technology and Master's degree in Science and who have qualified in GATE

(Graduate Aptitude Test in Engineering) are eligible to apply for M.S. programme in Industrial Engineering & Industrial Management.

Minimum Qualification for Admission

M.Sc. : A First Class or 60% marks or equivalent in the Bachelor's Degree in Science (Chemistry, Mathematics, Physics). For the Department of Chemistry, only candidates with B.Sc. Chemistry main and Mathematics and Physics ancillaries or as additional mains are eligible. No other ancillaries are eligible. For the Department of Mathematics only those candidates with Mathematics as major are eligible to apply. For the Department of Physics candidates with Bachelor's Degree in Physics with Mathematics as one of the ancillary subjects are eligible to apply.

Those appearing for their qualifying examinations are also eligible to apply provided they are completing all their qualifying examinations not later than 1st August 1985. Candidates will have to come to Indian Institute of Technology, Madras **at their own cost** for a departmental written test followed by an interview.

M.S. : All applicants for full-time M.S. programme, should possess a Bachelor's degree in Engineering/Technology or equivalent or Master's Degree in Science (Mathematics, Physics, Statistics, Applied Science, Material Science and Chemistry for certain areas) with a First Class or with a minimum of 60% marks in the aggregate in the qualifying degree examination in the prescribed discipline and *should have successfully completed the Graduate Aptitude Test in Engineering (GATE)*. For certain areas in Civil Engineering, Bachelor's degree holders in Aeronautical Engineering/Agricultural Engineering or Master's degree holders in Applied Mathematics/Applied Sociology/Geo-Physics with a first class or 60% marks in the aggregate are also considered. In addition, science graduates should possess two years experience in Civil Engineering area. AMIE candidates are not eligible to apply for M.S. Research Programme.

Ph.D. : Candidates should possess a First Class or a minimum of 60% of marks in the aggregate or equivalent in the qualifying degree examination in the prescribed discipline as indicated below :

Master's Degree in Engineering/Technology or equivalent for the Engineering Departments. For the Department of Aeronautical Engineering candidates with a Master's degree in Mathematics/Physics are also eligible to apply. For certain areas in Civil Engineering, Master's degree holders in Engineering Mechanics/Aeronautical Engineering/Architecture/Town and Country Planning/M.B.A. after obtaining basic degree in Civil Engineering with a First Class or 60% marks in the aggregate are also considered. Candidates who have qualified for the award of the Bachelor's degree in Engineering/Technology with exceptionally good academic background in the prescribed discipline and who have successfully completed the Graduate Aptitude Test in Engineering are also eligible to apply subject to the following conditions :

(1) If the candidate happens to be a B.Tech. degree holder of an IIT or B.E. degree holder of the I.I.Sc., Bangalore, he should be in the top 25% of the class.

(2) In the case of Bachelor's degree holder from a University, he should be among the top 10 rank holders in the University.

(3) The candidate should be eligible for admission to the M.Tech. programme in the particular stream by virtue of his GATE score.

Note : Candidates who are likely to complete their M.E./M.Tech. (1½ *years) Courses by December* 1985 *may also apply against this advertisement and submit their applications within the prescribed dates in this advertisement. They will be called for interview/test sometime in December* '85.

Concession to Candidates Belonging to Scheduled Caste/Tribe

(a) 15% for SC and 7½% for ST are reserved with provision for interchange of the percentages.

(b) Relaxation upto 5% in the qualifying examination marks.

Scholarship

M.Sc. : On the basis of performance at the end of the I semester 25% of the students admitted will be awarded merit scholarship of Rs. 170 p.m. and exempted from payment of tuition fees. In addition, another 10% of M.Sc. students are exempted from payment of tuition fees.

All SC/ST students of M.Sc. who satisfy the means criteria as per the Government of India Postmatric Scholarship rules will be eligible for free messing (Basic menu only) plus out of pocket allowance of Rs. 70 p.m. Day Scholars are eligible for scholarship of Rs. 185 p.m. (inclusive of State Government Scholarship, if any). In addition, all SC/ST students are exempted from payment of tuition fees and hostel seat rent.

M.S./Ph.D. : Students admitted to the Research Programmes will be eligible for scholarships as per rules.

Candidates called for interview for full-time Ph.D. programme will be paid second class to and fro train fare from their place of residence to the Institute by the shortest route.

External Registration (M.S./Ph.D.)

Facilities are available for persons working in scientific laboratories/Industries with R & D facilities/R & D establishments to work for M.S. and Ph.D. in Engineering Departments. The candidate must possess the minimum academic qualifications prescribed for the full time candidates and also a minimum of two years of continuous service in these organisations in research/design/development areas. Candidates not possessing first class or 60% marks but possessing outstanding R & D experience (measured in terms of research publications in standard journals and patents taken) may also be considered for admission subject to their satisfying the prescribed conditions. Such candidates have also to appear for a departmental qualifying examination. The candidates must be sponsored by their organisation with an undertaking that the organisation will provide all facilities to the employees to pursue research. The candidates, if selected, should take leave and relief from the employer for the prescribed residence period. No scholarship will be paid for external registration candidates. NO T.A. WILL BE PAID FOR THESE CANDIDATES ATTENDING INTERVIEWS. Faculty members from Universities/Colleges are not eligible to apply under this scheme.

General

Application form and information regarding courses/programmes can be obtained by candidates on requisition mentioning clearly the course/programme/department for which they are applying and by sending (i) a Bank Draft for Rs. 12 in favour of Indian Institute of Technology, Madras, payable at Madras and (ii) a self-addressed unstamped envelope (27 cm × 12 cm) to :

The Deputy Registrar (Academic)
Indian Institute of Technology
Madras-600 036

The Demand Draft should not have been dated earlier than **10th April 1985**. The cover addressed to the Deputy Registrar (Academic) should be superscribed as "ADMISSIONS 1985-86—M.Sc. Chemistry/Mathematics/Physics, as the case may be for M.Sc. courses and "ADMISSIONS—1985-86—MS/PhD" for Research Programmes on the left hand corner of the cover. A candidate proposing to apply for more than one department/programme should request for additional application forms for which a fee of Rs. 12 for each additional application form should be included in the Bank Draft. Those who apply for **External Registration** should indicate the same clearly in their requisition.

Last date for Receipt of Requisitions for Application by Post	..**10th May 1985 (Friday)**
Last Date for Receipt of Completed Applications	..**24th May 1985 (Friday)**
Probable dates for Interview/Test	M.Sc. ..**27th June 1985 (Thursday)** **28th June 1985 (Friday)** **29th June 1985 (Saturday)**
	M.S./Ph.D...**1st July 1985 (Monday)** **2nd July, 1985 (Tuesday)** **3rd July, 1985 (Wednesday)**

Advt. No. F. Acd./ARU/1/85-86.

DEPARTMENT OF LIFE SCIENCES

MANIPUR UNIVERSITY

CANCHIPUR : IMPHAL

Applications are invited on plain paper giving full details of academic qualifications for Junior Research Fellowship (one) in a University Grants Commission sponsored research scheme "Biochemical adaptations in fishes during environmental changes". Only those who have qualified the national test conducted by UGC for JRFs need apply. Candidates with knowledge of biochemical techniques and biochemistry background will be preferred. The fellowship will be of Rs. 1000/- p.m. only. Applications should reach the undersigned within three weeks from the date of advertisement.

Dr. Ramesh Sharma
Principal Investigator

CLASSIFIED ADVERTISEMENTS

GURUKULA KANGRI VISHWAVIDYALAYA
HARDWAR
No. GKV/6-4/GEN./85
Dated : 20 April, 1985

Applications are invited on plain paper, alongwith complete bio-data supported by attested copies of testimonials, certificates and recent passport size photograph (in six copies) for the following posts. The application with crossed postal order of Rs. 10/- payable to Registrar, Gurukula Kangri Vishwavidyalaya, at Gurukula Kangri Post Office must reach the undersigned on or before **30th May, 1985.**

1. Professors : Philosophy, English, Psychology, Ancient Indian History Culture & Archaeology, Botany, Sanskrit.

Grade : Rs. 1500-60-1800-100-2000-125/2-2500.

Qualifications

An eminent scholar with published work of high quality; Actively engaged in research. About ten years experience of teaching and/or research. Experience of guiding research at doctoral level.

OR

An outstanding scholar with established reputation who has made significant contribution to knowledge.

Preferential

(i) **Philosophy** : Vedantacharya/Nayayacharya deep knowledge of Indian Philosophy.

(ii) **Ancient Indian History :** Knowledge in Modern Indian History or research experience with special reference to History of Indian Freedom movement.

(iii) **Psychology :** Social Psychology or Knowledge of basic constructs of Ayurveda or clinical psychology or projective techniques.

(iv) **Botany :** Plant physiology, ecology, including that of micro-organisms.

2. Reader : Sanskrit, Zoology, Veda, Physics.

Grade : Rs. 1200-50-1300-60-1900

Qualifications

Good academic record with a doctoral degree or equivalent published work.

Evidence of being actively engaged in (i) research or (ii) innovation in teaching methods or (iii) production of teaching materials, and/or research, provided that atleast five of these years were as lecturer or on an equivalent position.

3. **Lecturer :** Tamil Hindi, Mathematics.

Grade : Rs. 700-40-1100-50-1600.

Qualifications

(i) A Doctor's degree or research work of an equal High standard, and

(ii) Good academic record with atleast second class Master's degree in respective languages/subject from an Indian University or an equivalent degree from a foreign University.

Desirable (Lecturer in Maths) : Degree or diploma in computer programming.

Note

1. Female candidates need not apply
2. Qualifications may be relaxed by the selecton committee in the caee of candidate with outstanding record of teaching and research.
3. Higher start may be given to deserving candidates.
4. Teachers will be expected to do research and extension.
5. Applicants should give names and addresses of two referees not related to them.
6. The post of professor in Ancient Indian Hitory is purely temporary and of two years duration.
7. The post of reader in Sanskrit is temporary but likely to be made permanent.
8. The post of lecturer in Maths is temporary but likely to continue.
9. Knowledge of Hindi is essential.
10. Only vegetarian and Non-smoking candidates should apply.

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REGISTRAR

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Qualifications

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(ii) Master's Degree in Library Science with first or high second class.

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INDIAN INSTITUTE OF SCIENCE

BANGALORE-560012

Applications in the prescribed form are invited for the posts of FINANCIAL CONTROLLER & ADMINISTRATIVE CONTROLLER (RESEARCH) at the Institute in the grade Rs. 1500-60-1800-100-2000-125/2-2500 plus allowances at Central Government rates prevailing at the Institute from time to time. Emoluments at the minimum of the scale total to Rs. 2,915/- per month excluding House Rent Allowance.

Qualification and Experience

For Post 1. Advertisement No. R(IA) 308-15/85 Dated 24th April 1985

Financial Controller

1. Graduate from a recognised University.
2. A.C.A./A.I.C.W.A./S.A.S. Accountant.
3. 10 years of post qualification supervisory experience out of which 6 years should be in an executive position carrying a pay scale of not less than Rs. 1100-50-1600 or equivalent dealing with budgeting and financial control, presentation, analysis and interpretation of financial and operating data.
4. Should have held independent charge of accounting sections of large scientific institutions/universities/government technical institutions/R&D Laboratories.

Job Description

The person selected will have to (i) function as an internal financial adviser; (ii) be responsible for budgetary control, management of grants, investments, ways and means position, (iii) be in overall charge of maintenance of books of accounts, receipts and payments, preparation of annual accounts; preparation of periodical financial review/control, statements; (iv) be responsible for scrutiny and analysis of financial proposals for Institute projects, consultancies etc., (v) be responsible for the preparation of financial data for fixation of block grants/developmental grants to the Institute by the University Grants Commission; and (vi) discharge any other duties that may be assigned by the Director from time to time.

Qualification & Experience

For Post 2, Advertisement No. R(IA) 308-16/85 Dated 24th April, 1985.

Administrative Controller (Research)

1. Graduate from a recognised University.
2. At least 10 years administrative and secretarial experience out of which 6 years should be in a responsible position carrying a pay scale not less than Rs. 1100-50-1600 or equivalent. Considerable experience of Committee work and acquaintance with modern management techniques are desirable. Preference will be given to persons who have shown leadership qualities and capacity to grow others. The candidate should have a level of capacity and perspective necessary for participating with scientific and academic members of staff in decision-making processes.
3. Acquaintance with scientific and technical and other organisations in the country will be an additional qualification.

Job Description

The person selected will be in overall charge of the administration and finances of the Schemes and Projects/correspond/interact with the funding agencies deal with all appointments pertaining the schemes/projects; be in charge of maintenance of books of accounts, receipts and payments, preparation and submission of annual accounts and discharge any other duties that may be assigned by the Director from time to time.

Relaxation

Qualifications and experience may be relaxed in the case of candidates with exceptional merit and proven ability.

Tenure of Appointment

Normally, all new appointments at the Institute are made on contract for period of five years, including an initial probationary period of one year. However, it is open to the authorities to consider continuing appointments till the age of superannuation. In the latter case, the period of probation will be two years.

General

Application forms (six copies) can be obtained from the Registrar, Indian Institute of Science, Bangalore-560012 (separately for each post) on requisition. Each request for application forms should be accompanied by a crossed Indian Postal Order for Rs. 5/- (non-refundable) made payable to the Registrar, together with a self-addressed stamped (Rs. 3.30) envelope of the size 28cms x 18cms. The payment of application fee is exempted in the case of Scheduled Castes/Scheduled Tribes candidates on production of certificates from a competent authority.

The last dates are :

(a) for issue of application forms **15-5-1985**
(b) for receipt of completed application forms **25-5-1985.**

Applicants in the service of government, quasi-government, government aided or similar institutions should apply through proper channel. Otherwise, their application will not be considered.

Those who have applied earlier in response to the avertisements No. R(IA)307-4/84 and R(IA)307-5/84 dated 2-5-1984 for the post of Registrar (Finance) and Registrar (Schemes/Projects) need not apply again.

Higher starting salary may be considered to candidates with exceptional merit.

Detailed terms and conditions of appointment will be supplied along with the application forms.

REGISTRAR

JADAVPUR UNIVERSITY

CALCUTTA-700032

Employment Notification
No. A2/C/8/85

Dated : April 17, 1985

The University invites applications in the prescribed form for the following post :

1. Assistant Controller of Examinations—One post
Scale of Pay : Rs. 700-40-1100-50-1600/-

Qualifications

Essential

(i) Uniformly good academic record with a B+Master's Degree or its equivalent.
(ii) Atleast 5 years experience in a supervising capacity in a University or a Research Institute or a Government/Quasi Govt. organisation.
(iii) Age not below 30 years. Relaxable in case of exceptionally qualified candidate.

Desirable

Teaching experience and/or experience in the examination work of University/Statutory Board.

Note

Qualification of Master's Degree may be relaxed in the case of candidates possessing uniformly good academic record with at least 7 years' experience as Superintendent or in equivalent post in a University. In that case, the performance records of such candidates for 7 years will also be examined.

Last date of receiving applications is May 13, 1985.

Application forms are obtainable from the University Office during working hours on payment of Rs. 2/- or by post on payment of Rs. 3/- inclusive of postage. No travelling allowance is admissible to candidates called for interview. Higher initial salary may be given to really deserving candidate. Those who are in employment should submit their applications through proper channel. Choice of Selection Committee will not necessarily be confined to applicants only. Canvassing in any form will disqualify a candidate.

REGISTRAR (OFFG.)

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University News

MAY 8, 1985

Re. 1.00

CD-152

- Reforming University Examination System
- New Education Policy: Some Urgent Tasks
- Seminar on Zonal Cultural Centre
- National Symposium on Recent Advances in Organic Chemistry
- National Testing Service

MANIPUR UNIVERSITY

CANCHIPUR : IMPHAL-795003

Advertisement No. 5

No. MU/2-14/II/85/FCY

18th April, 1985.

Applications are invited for the following posts :—

1. Professor in	**No. posts**
(i) Life Sciences	1
(ii) Economics	1
(iii) Commerce	1
(iv) History	1
(v) English	1
(vi) Political Science	1
2. Associate Professor in	
(i) Chemistry	1
(ii) Mathematics	1 (Temporary)
(iii) History	2
3. Assistant Professor / Research Associate in	
(i) Chemistry	1
(ii) Hindi	2
(iii) Manipuri	1
4. Head of Computer Centre (Systems Manager)	1
5. Systems Engineer	1
6. Programmer	2
7. Computer Operator	2
8. Key Punch Operator	2

Scale of Pay

1. Professor : Rs. 1500-60-1800-100-2000-125/2-2500/-.
2. Associate Professor : Rs. 1200-50-1300-60-1900/-
3. Assistant Professor/Research Associate : Rs. 700-40-1100-50-1600/-
4. Head of Computer Centre (Systems Manager) : Rs. 1100-1600/-
5. Systems Engineer : Rs. 1100-1600/-
6. Programmer : Rs. 700-1300/-
7. Computer Operator : Rs. 425-700/-
8. Key Punch Operator : Rs. 260-400/-

There will be allowances, like DA. ADA, HRA, Medical Allowances, etc., admissible under the rules of the University. Benefits of G.P.F.-cum-Pension-cum-Gratuity or C.P.F.-cum-Gratuity are also available.

Essential Qualifications

1. Professor : An eminent scholar with published work of high quality actively engaged in research, in the relevant field. About ten years experience of teaching and/or research. Experience of guiding research at doctoral level.

OR

An outstanding scholar with established reputation who has made significant contribution to knowledge, in the relevant field.

2. Associate Professor

(a) Good academic record with a doctoral degree or equivalent published work in the relevant field. Evidence of being actively engaged in (i) research or (ii) innovation in teaching methods or (iii) production of teaching materials.

(b) About five years' experience of teaching and/or research provided that atleast three of these years were as Assistant Professor/Lecturer or in an equivalent position.

(c) This condition may be relaxed in the case of candidates with outstanding record of teaching/research.

3. Assistant Professor/Research Associate

(a) A Doctorate Degree or research work of an equally high standard; and

(b) Good academic record with at least second class Master's degree in the relevant subject from an Indian University or an equivalent degree from a foreign University. Having regard to the need for developing inter-disciplinary programmes, the degrees in (a) & (b) above may be in relevant subjects.

Provided if the Selection Committee is of the view that the research work of a candidate is evident either from his thesis or from his published work is of very high standard, it may relax any of the qualifications prescribed in (b) above.

Provided further that if a candidate possessing a Doctor's Degree or equivalent research work is not available or is not considered suitable, a person possessing a good academic record, (weightage being given to M.Phil. or equivalent degree or research work of quality) may be appointed provided he has done research work for atleast two years or has practical experience in a research, Laboratory/Organisation on the condition that he will have to obtain a Doctor's Degree or give evidence of research of high standard within eight years of his appointment, failing which he will not be able to earn future increments until he fulfils these requirements.

4. Head of Computer Centre (Systems Engineer)

M.E./M.Tech. with 3 years' experience or Post-graduate Diploma in Computer Science with 4 years' experience or Master Degree in Physics/Mathematics / Statistics / B.E. / B.Tech. with 5 years' experience in Computer work or Science Graduate with 7 years experience in Computer work.

5. Systems Engineer

M. Tech. in Computer Science or M.Sc. in Physics/Mathematics/Statistics or Post-Graduate Diploma in Computer Science with atleast 2 years working experience in Computer System and requisite training in hardware and software aspects of Computer System.

6. Programmer

Atleast 2nd class M.Sc. in Physics or Mathematics or Statistics with Diploma in Computer Programme and experience programming in FORTRAN AND COBOL.

7. Computer Operator

B.Sc. with Physics or Mathamatics or Statistics with experience in Computer Programming for atleast one year.

8. Key Punch Operator

HSLC or equivalent with experience in Key Punch Operator and Typing.

Specializations for Teaching Posts

1. Professor in

- (i) Life Sciences : Entomology, Plant Pathology, Genetics and Ecology.
- (ii) Economics : Industrial Economics/ Development Economics.
- (iii) Commerce : General
- (iv) History: General
- (v) English : English Linguistics and/or English Language teaching.
- (vi) Political Science : Modern Indian Political Thought and Theory.

2. Associate Professor in

- (i) Chemistry : Organic Chemistry.
- (ii) Mathematics : General.
- (iii) History: (i) Modern Indian History (ii) Medieval Indian History.

3. Assistant Professor/Research Associate in

- (i) Chemistry : Physical/Organic/Inorganic Chemistry.
- (ii) Hindi : (1) Sound knowledge of Manipuri Language and Literature. (2) Sound Knowledge of Manipuri/ any other North Eastern Indian Language/experience in Translation work.
- (iii) Manipuri : Theories of Literary criticism both Eastern and Western

Candidates invited for interview will be given first class railway-fare as T.A. from the place of origin to Calcutta or Gauhati and air-fare from Calcutta or Gauhati to Imphal as the case may be, for both ways, on production of travel documents/tickets.

How to Apply

Applications, on plain paper (duplicate), with attested copies of certificates in support of qualifications and experiences showing candidates' name; fathers' name; academic and professional attainment; experience; field of specialisation; publications (to be enclosed with reprints); research projects undertaken; details of visits to foreign countries and the assessment reports from atleast two persons well acquainted with the candidate's professional work should reach the Registrar, Manipur University, Imphal-795003 on or before **28th May, 1985.**

Applications received late or incomplete in any respect may not be entertained. Separate applications along with the enclosures are required to be submitted in case a candidate intends to apply for more than one post. Persons already in service must apply through their employers so as to reach this office on or before the last date fixed. No application, will be considered for interview unless he/she produces a 'No Objection Certificate' from his/her employer at the time of interview.

Retired persons who have not attained the age of 62 years may also apply for appointment on a contract basis. It will be open to the University to consider names of suitable candidates who may not have applied.

UNIVERSITY NEWS

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Editor :
M. S. RAMAMURTHY

AIU Proposes National Testing Service

Consequent upon the recommendations made at the AIU Annual Meeting at NEHU, Shillong, a sub-committee was constituted under the Chairmanship of Dr. S.D. Gogoi (President AIU) with Prof. Rais Ahmed (UGC), Prof. S.V. Chittibabu, (Annamalai), Dr. K.G. Deshmukh, (Amravati), Dr. B.M. Shukla, (Gorakhpur), Prof. J.M. Choudhury (Gauhati), Shri S.C. Behar (Guru Ghasidas Univ.), Prof. H.S. Srivastava, (NCERT), Dr. Jagdish Narain (AIU) and Prof. V. Natarajan, (AIU) as members to consider the setting up of National Testing Service (NTS) and prepare a report on its objectives and goals, functions and activities and the structure. The sub-committee met on March 20, 1985 at AIU House, New Delhi.

Dr. Jagdish Narain, Secretary, AIU traced the background of NTS and suggested that a document needs to be prepared outlining basic concepts, objectives and goals, of the NTS. Prof. Natarajan presented certain issues for discussion and the following recommendations were made:

(1) That the problem of short listing from a large number of candidates both for admission and for employment must be tackled professionally and that NTS should provide such services.

(2) That a package for selection to various job positions is recommended in place of just an interview.

(3) That packages for both admission to courses and for selection to jobs may be through NTS after consultation with the organisation concerned. Such a package for admission will consist of (PQE), performance in battery of admission test (BAT), performance in group discussion/task (GD/T) and finally performance in personal interview (PI). A merit list can be prepared on the basis of scores in all these components duly weighted.

(4) That both the 10th & 12th examinations be restructured to include test of academic knowledge, scholastic aptitude and skills on a National basis and percentile ranks indicated for every candidate of these three components. A similar examination after the 15th year of schooling can be organised for postgraduate admission.

(5) That a National Testing Service (NTS) may be established as a non-profit organisation to render service.

(6) That all the three functions of test development, test administration and test analysis be taken up by NTS.

(7) The objective, relating to research, interpretation of test results and development of test material be given priority to begin with.

(8) No specific recommendation is made in respect of organisational structure for National Testing Services.

Dr. Rais Ahmed, briefing the group on the UGC plan for NETS (National Educational Testing Service), reiterated that the National Examination for junior research fellowship is a beginning and there are more to come. He suggested that the AIU can set up a NTS unit which should concentrate on research and development work and help universities and other organisations prepare, conduct and interpret results of tests and examinations on a national level. The Chairman then suggested that AIU may prepare a monograph on National Testing Services elaborating on aims, objectives and goals, functions and activities and alternative organisational structures and this monograph could form the basis for further discussion.

Reforming University Examination System

R. P. Singhal*

Paper presented at the seminar-cum-symposium on Examination Reforms organised by Saurashtra University, Rajkot on February 9, 1985.

Beginning from the Woods Despatch of 1854, the examinations have had a difficult time, but all the same, they have stayed on. A review of the examination system from time to time has revealed its various weaknesses. There has been a constant struggle to reform the system by removing its weaknesses but the irony of things is that instead of any improvement having taken place, what we see generally is that examinations have now become counter-productive.

Teaching Subordinated to Examination

It was as early as 1902 that Indian University Commission pointed out that teaching in India is subordinated to examination and not examination to teaching. The Calcutta University Commission in 1919 emphasised that the purpose of examinations should be more clearly defined so that there is no domination of examination system over the teaching system. Hertog Commission of 1927 stated that examinations had become so predominant in our educational structure that passing in them rather than the development of human beings, was the main objective of the educational institutions. The Sargent Plan of 1944 also made a similar observation.

After independence, when Radhakrishnan Commission reviewed the university system of our country in 1950, it remarked, "We are convinced that if we are to suggest any single reform in university education, it would be that of examinations". It suggested immediate introduction of valid, reliable and objective based examinations in our universities. The Mudaliar Commission, though concerned with secondary education, also recommended in 1952, improvement of external examinations and introduction of internal assessment so as to measure fully the all-round progress of the students. That was followed by setting up of All-India Council for Secondary Education and establishment of a Central Examination Unit in the Council. Later, this function was taken over by the N.C.E.R.T. which did some useful work in improving the quality of testing at the school stage.

The appointment of Education Commission 1964-66) provided another opportunity to look at the educational system of India in a comprehensive way. The Commission laid great stress on the modern concept of evaluation and stated that no programme of evaluation can be viewed in isolation from the total system of education. It observed that evaluation exercises a great influence on the student's study habits and teacher's methods of instruction. The examinations, therefore, not only measure the educational achievements but also play a great role in improving the educational system.

The Education Commission further observed that the crippling effect of external examinations on the quality of work in higher education is so great that examination reform has become crucial to all progress, and has to go hand in hand with the improvements in teaching. It also stated that one line of attack would be to abolish set syllabuses and the external examinations based on them, and to replace them by a system of internal and continuous evaluation by teachers themselves. It observed that this was already being done in some institutions like the Indian Institutes of Technology and the Agricultural universities and it could be extended to others as soon as the necessary facilities and conditions can be provided. The Commission hoped that in no distant date it will be adopted by all the teaching universities and that the major universities would give a lead in the matter.

U.G C.'s Plan of Action (1972)

In 1972, the UGC endorsed the recommendations contained in the document "Examination Reform—A Plan of Action" prepared by a Working Group which had been set up by the Ministry of Education, Government of India. The document suggested a series of steps which it considered practicable. These inter alia were :

(i) The university should allow decentralisation of examinations retaining power for broad supervision of the examinations and power to give binding advice to the colleges in this respect. The university should maintain complete information about the manner in which colleges conduct examinations and it should keep a record of the statistics of performance. The results should be analysed and the university should draw the attention of the colleges to this analysis.

---

* *Executive Director, National Institute of Educational Planning and Administration, New Delhi*

(ii) The boards of studies established by the universities should not only frame the syllabus, but also a "Bank' of questions for each of the courses. Questions for the Bank may be invited from teachers as well as students, and where necessary members of the boards of studies should frame questions. The questions in this Bank must be suitably distributed over the entire course and they should preferably be of equivalent standard. The questions may be modified or changed every year.

(iii) Colleges should be allowed to hold the examinations under the supervision of their own staff, the examination questions being selected from the question bank as suggested above. The university should lay down the procedure for selecting questions from the bank, and it should make known the scheme of evaluation for each answer to a question. It may be possible to have the questions printed on cards so that students could pick up a given number of cards by a random process. It is expected that in this manner expense on setting of question papers, printing and storage etc., as also on invigilation could be largely avoided.

(iv) The scripts must be examined by the teachers concerned at the colleges and the answer books should be returned to the candidates. Candidates who wish to appeal against the grade awarded by the teacher should be given an opportunity to appeal to a committee of which the members may be the principal, a teacher from the department or section concerned and perhaps a student representative.

(v) The degree should be awarded to all those candidates who attain a certain grade level to be decided by the university. Since the lowest grade in the system is suggested to be D, if a student gets a D in all the examinations or assessment for courses in a particular year the university may reserve the right to cancel his admission. Students who have completed the normal time for the degree or diploma may be given an additional semester or year to improve their performance under certain conditions to be decided by the university.

(vi) Colleges should be required to keep a cumulative record of the grades of the students and a copy of the record must be supplied every year to the university.

(vii) The grade cards issued to the candidates should show the record of sessional assessment side by side with the examination grades. Whether or not sessional assessment should be counted towards an overall grade, and if so the weight to be attached to it, is a matter which should be decided by the university.

In 1978, the UGC appointed an Implementation Committee to advise it on various measures for implementing the examination reform programme. On the basis of the review made by the Committee of about 130 universities including deemed universities, the following was the position of the examination reforms in the universities/institutions in 1982-83: the sessional evaluation at different levels was introduced by 44 universities, 8 institutions deemed to be universities and 22 agricultural/technological universities; question banks had been or were being developed in 19 universities, and 2 agricultural universities; grading system was in operation at 22 universities, 6 institutions deemed to be universities and 18 agricultural/technological universities; and semester system was in operation at 47 universities, 7 institutions deemed to be universities and 15 agricultural/technological institutions.

The Set-back

It was further noted with concern that there had been some set back in some of the universities in implementing the reforms and that some of the universities had gone back in the reforms introduced by them earlier. For example, Calicut University and Punjabi University, Patiala discontinued the question bank scheme which they had introduced earlier. As regards grading the following 12 universities/institutions completely gave up the grading scheme after having introduced it: Andhra, A.P. Singh, Bhopal, Delhi, Indore, Jiwaji, Madurai Kamaraj, NEHU-Shillong, Rajasthan, Ravi Shankar, Saugar and School of Planning and Architecture-New Delhi. The Gauhati University which proposed to introduce the 7-point grading scale at the post-graduate level decided to keep the proposal in abeyance. Similarly Calicut, Meerut and Vikram Universities discontinued the semester systems which they had introduced earlier.

The Minimum Programme

Taking note of the aforesaid situation, the UGC Examination Reform Implementation Committee recommended that every university should take up some minimum programme relating to examination reform withins its own resources and without necessarily depending on the assistance from UGC. The programme should include (i) restructuring of courses, syllabi including lecture-wise schedules and formulation of objectives; (ii) reforms in question paper design and structure; and (iii) continuous sessional evaluation.

Further, three more important recommendations were made by that Committee which were as follows :

(a) There should be some minimum preparation by the universities before implementing the reforms and that the UGC should develop some practical guidelines for the purpose and also disseminate information concerning 'success' and 'failure' stories as widely as possible.

(b) Since sessional evaluation and external examinations measure, different skills and abilities, it would be scientifically unsound to total them upto arrive at an aggregate/overall grade. In this connection, the committee reiterated its earlier view that marks/grades of continuous sessional evaluation and external examinations should be shown separately and also the name of college/institute should be shown in the grade card. The committee further desired that passing separately in sessional evaluation and external examination should be made obligatory.

(c) It was observed that the grading system had been introduced only by a few universities and that some of the universities which were on grading system were converting marks into grades using a common conversion table for all subjects. It was felt that there had been some conceptual misunderstanding about the grading system. Since there was no equivalence between marks and grades, the committee suggested that universities should adopt direct grading instead of marks being converted into grades and for this purpose teachers as well as students should be oriented through workshop. The personnel working in examination reform units should also be oriented regarding the principles and mechanics of grading, as well as other important measures of examination reforms.

The Committee also suggested that examination reform units approved by the UGC in some selected universities should act as Regional Centres to monitor the minimum programme for other universities in their respective regions.

Loss of Credibility

While announcing the minimum programme in December 1982 the UGC noted with considerable disappointment that the incidence of mass copying and use of unfair means had increased to such an extent that examination in some of the universities were becoming a farce. Many universities were unable to hold examinations according to schedule or even to put in the requisite number of teaching days before holding examinations. The actual conduct of the examinations had become a nightmare. Notes and other materials were smuggled in the examination halls and answer to question papers were announced on loud-speakers. Sometimes there was a constant threat to the life and limb of the invigilators or examiners. Consequently, examinations and degrees awarded by a number of universities have suffered in their credibility. The concerned universities are unable to properly discharge the trust which is put in them by the legislatures to certify the quality of graduates which they produce; hence employers have had to introduce their own examinations for recruitment. In the event, according to the UGC, the worst sufferers are thousands of students and their parents and guardians.

While reiterating its support for long-term perspective of examination reforms as spelt out in 'Examination Reforms—A Plan of Action' the Commission suggested the following urgent measures for implementation by each and every university :—

(a) **Syllabus/Question Paper**

(i) The syllabus in each paper should be demarcated into well-defined units/areas of content along with a topic-wise breakdown. The units may be numbered.

(ii) Examiners should be free to repeat questions set in previous examinations. This is necessary in order to ensure that students do not leave out important portions of the syllabus. Instructions to paper-setters should be amended accordingly.

(iii) There is often a very wide choice given to students for answering questions say 5 out of 10. Such overall choice restricts the area of knowledge with which a student can pass an examination and is, therefore, undesirable. If there is choice, it may be provided by alternate questions in each unit of the syllabus.

(iv) No examination should be held without fulfilling the requirement of a minimum number of lectures/tutorials/laboratory sessions etc. which should be clearly laid down by the university.

(b) **Conduct of Examinations**

In order to enable university authorities to conduct examinations in a fair and impartial manner, the Commission would explore the possibility of the enactment of suitable legislation to make cheating in examinations a cognizable offence and to provide the necessary administrative support to check malpractices. In the meantime, universities must take all steps for the proper conduct of examinations such as effective security measures, proper supervision and invigilation cordoning off the examination centres from the range of loud-speakers and other interference, flying squads and stern action in all cases involving copying and use of unfair means.

Neither good learning nor good testing

The position today is perhaps much worse than what was noted by the UGC two years ago. The violence and use of malpractices in examinations has assumed alarming proportions. The university degree being linked with jobs has higher value which makes it more susceptible to use of unfair means on a large scale. It is also observed over the years that the number of examinations which a university has to conduct each year has multiplied and the main job of the universities, it seems, has become more of 'somehow' conducting these examinations rather than engaging themselves in pursuit of academic excellence. You talk to any Vice-Chancellor or Registrar of a university and the expressions of utter disgust against the present system of examinations are quite manifest. Many a university has a backlog of examinations. In one of the universities which I visited recently, the examinations which were to be conducted in 1983 are going to be conducted in 1985!

Declaring cheating in the examinations a cognizable offence as done by Maharashtra, Karnataka and some other States, or giving magisterial powers to the examination superintendents as done by U.P., has not brought any fruitful results.

Amrik Singh in his recent book on 'Commonsense About Examinations' states that during the last few decades we have put all emphasis on testing and how to improve it and make it more valid and reliable but very little has been said or done in regard to the teaching and learning. In consequence we have neither been able to ensure good learning nor good testing. The UGC, he says, attempted to replace the existing system of assessment altogether but we have neither succeeded in displacing the old system nor in implanting a new one. As a result, the system followed over the years has become even more dysfunctional than before.

What then is the remedy? Amrik Singh argues that internal assessment while highly desirable in itself can be used only as a supplement to the external examination and not in place of it. He feels that it is only by reforming the public examinations that some improvement in the situation can take place. R.C. Paul in his paper on Examinations and their Role in educational improvement asks the question? Why undue emphasis on "external" examinations. He feels, new methods intended to introduce modern concepts into a course are likely to be hindered by the external examination in which people who have not participated in the actual preparation and teaching of a course in its improved form are examiners.

The Alternative

Having being closely associated with examinations both at university stage as well as at school stage for a long time, I am convinced that the present system of public examinations has become unwieldy and unmanageable with huge number of students taking an examination at a time. Certain evils have crept in which it is not possible to mitigate unless the whole system is reviewed and restructured. It is but natural that in the existing state of things there would be mass leakages of question papers because people can make money over-night owing to large numbers involved. Since independence, the educational system has expanded tremendously and it is high time that we think in terms of decentralising the examinations. This, of course, is called for not only at the higher education stage but also at the school stage where in fact the problem is equally worse. The following action-plan is suggested :

(i) With the current emphasis on delinking degrees from jobs, the Plus Two stage has to become more meaningful. This may be possible if the vocational courses are relevant to the local requirements particularly at the district level. This would mean holding the examination at the end of +2 at the district level rather than at the State level as is the case at present. The admission to professional colleges after +2 should be based on an entrance examination which should be conducted at the State level by the State Boards of Education. For entry into national institutions of higher learning there should be a National Merit Examination. Admissions to the first year of the 3-year degree course in colleges should be based on the result of the +2 examination and should be governed by the neighbourhood principle. The student should have the choice to take one or more of these examinations.

(ii) All colleges should introduce continuous evaluation of students.

(iii) There need not be any university examination at the end of 1st or 2nd year of the Three-Year Degree course. Promotions to 2nd year and 3rd year should be made on the basis of continuous assessment and annual examinations which should be held by the colleges themselves. The weightages for continuous assessment and annual examinations should be fixed, as is already being successfully done in the I.I.Ts and at the school stage.

(iv) The degree examination, based on the syllabus for 3rd year only, should be held at the district level and not at the university level. This would enable the curriculum to be made more relevant to the local needs. It would also enable special attention to be paid to backward districts, blocks and colleges. What generally happens at present is that curricula and examinations are more suited to urban students only and the rural students are put to a serious disadvantage. This has to be checked.

(v) The degree examination at the district level which will cover on an overage about 8 to 10 under-graduate colleges per district may be conducted by the lead college of the district (to be identified by the university concerned on the basis of an objective criteria). The university should help, advise and support the lead colleges of the various districts in coordination and maintenance of standards amongst different districts. It should supply model question papers, marking schemes, etc. to lead colleges. The university should in the circumstances be able to pay more attention to the improvement of curricula and teaching-learning process. It can also take an active part in raising the professional competence of the teachers by arranging more inservice courses as well as disseminating latest information on educational innovations, research findings and new knowledge in different disciplines.

(vi) Admission to post-graduate colleges and university departments should be held on the basis of entrance test to be conducted by the university concerned. Since only a small proportion of graduates go in for master's degree courses even today (the numbers will be still less if the degrees are delinked from jobs) and since only those who have the ability and aptitude to pursue higher education should go to the university, an entrace test coupled with viva by the faculty concerned would facilitate the selection. This would also obviate the necessity of conducting the degree examinations by the university.

The proposed decentralised model of examination system at the higher education stage will help to:

(i) reduce domination of the public examination on the educational system;

(ii) remove delays in holding the examinations;

(iii) give freedom to colleges to innovate and improve the quality of teaching-learning process ;

(iv) make education relevant to the local needs;

(v) delink degrees from jobs.

A Movement for Change

The universities should instead of frittering away their energies in conduct of the examinations which have lost their credibility and purpose should gear up their machinery in advising the colleges in instituting and improving continuous evaluation. They should train paper setters and examiners for under-graduate courses. They should do research and undertake studies in standardisation of scores, improving class room teaching, curriculum and evaluation. They should disseminate innovations and experiments conducted in these areas by different colleges for wider benefit. They should set up and continuously update question banks for different units of different subjects for each class. They can, thus spearhead a movement for improvement of the quality of education of which evaluation is only a means and not the end. ☐

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New Education Policy : Some Urgent Tasks

Ramlal Parikh*

The Government of India Resolution on National Policy on Education was laid in both the Houses of the Parliament on 24th July 1968. It had provided for a review of its implementation every five years. For 17 years there has been no comprehensive and holistic review in an objective manner. This is typical of all our educational measures. The first thing we should therefore ensure for future is that there is an autonomous mechanism for review of all educational programmes at regular intervals which should not be dependent on Government initiative alone. Of equal importance is to ensure that frequent structural changes on contingent adhoc considerations do not take place as the fate of our rising generations is at stake in every structural change. Thirdly it is very important and crucial that educational policies are settled on the basis of a consensus of all consensus so as to provide stability and wide acceptability to it.

It is heartening that the Prime Minister himself has given expression to political will of the Government of India which is highly essential for taking immediate measures for changes in our educational system to make it more conducive to our national goals and to the realities of the life and culture of our people and to make it more creative and productive. The basic tenets on which Dr. Kothari Commission recommended the reconstruction of our educational system still hold good. The experience of last 17 years prove that it is not the lack of policies but the lack of implementation of policies that has impeded the process of change. We therefore need to be very very specific in identifying the exact programmes and institutional network that we need to secure for achieving our goals. In a sense the constitution of our Republic gives a clear picture of our national goals through the Preamble and Directive principles of State Policy. Keeping this in the background we may spot out following programmes and measures :

(1) Article 45 requires the Government to universalise education upto the age of 14. It enjoins the State to cover not only elementary education but also pre-primary education. The pre-primary or nursery education has spread in a chaotic and exploitative manner. It is inescapable for Government to step into it and make it free for all children by adding one or two years of pre-primary classes in the existing primary schools. We cannot afford to neglect this most receptive period of child's life in inculcating moral and social values and values of dignity of work and social and national integration. Pre-primary education whether run by Government or non-government agencies must be totally free and no fees should be allowed to be charged by anybody.

(2) The work of universalisation of elementary education (lower-primary and upper-primary both needs special attention). An Elementary Education Commission to promote universalisation and particularly promote improvement of quality through selective measures is necessary to give undivided attention to one of our most fundamental constitutional obligation. A national model act on Primary Education will also be useful.

(3) The abolition of literacy is not a one-time process but a life-long process if neo-literates are to be prevented from lapsing into illiteracy. This too needs a long-term on-going arrangement at the national level to ensure its continuity and its integration with continuous improvement of functional knowledge. The prevalent part-time and sporadic efforts do not provide a lasting input. It is therefore necessary to transform all literacy classes into comprehensive Community Education Centres to be run on the typology of Night-schools or Folk-schools by using the existing school buildings in mornings and evenings. These Centres would need one whole time Community Education Organiser. It is possible to find resources for this even within the existing allocations by converting for part-time literacy centres into one Community Education Centre. This would then provide a stable resource support to all neo-literates.

(4) The vocationalisation of education at all stages and not just vocational courses at +2 level should be our aim. Without cultivating a culture of dignity of work it would not be possible to create ethos for vocationalisation of education. This means that we should provide minimum time for productive work-experience from nursery to 12th grade and even in collegiate education. This should not be a peripheral demonstration but an integral and imperative core component of education at all levels. A corporation to purchase all goods produced by students should be set up so that there is an incentive to produce more and with higher and higher quality.

(5) At the +2 stage and at the under-graduate college level liberal grants should be available to start variety of vocational courses to suit aptitudes of students and local needs. The present policy is giving 100% grants to traditional schools and colleges and only partial grants for vocational and technical courses is of highly discouraging nature.

(6) One agriculture and dairy, high school in every block, one polytechnique, multi-purpose higher-secondary school in every district should be established in two years. These institutions will provide ethos and expertise for popularising such courses. But all such courses should be liberally

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**Vice-Chancellor, Gujarat Vidyapith, Ahmedabad* supported if conventional schools also want to start it. The possessive conservative attitude of all Technical education boards is a serious impediment in the development of vocational courses.

(7) Nearly 2500 colleges which are sub-viable in terms of numbers should be converted into Community Colleges in accordance with the UGC scheme of restructuring of courses. Simultaneously a strict upper-limit of not admitting 1000 students should be enforced for all other colleges.

(8) Post-graduate education should be conducted by Universities only and affiliated colleges should not be burdened with it.

(9) Three-language formula as commended by Kothari Commission should be promoted by providing substantive incentives.

(10) Production of enormous pool of reading sources in all India Languages cannot be done by the University text-book boards alone. Each University should be very liberally supported in production of books, monographs and journals in the relevant regional language of the area. Without university teachers themselves producing their own reading and reference sources according to their indigenous needs of each course of instruction, the stereo-typed text-books will not be widely used.

(11) A law to regulate relations of management and employees as well as management and students is necessary to rationalise the grievance settlement mechanism in every educational institution and to ensure a certain minimum equilibrium between all concerned. Education should be created as an essential service where strikes and lock-outs both should not be normally resorted to.

(12) Experimentation should be promoted at all levels of education. Some schools, colleges, and institutions should be selected for additional project support for promoting experimentation.

(13) All schools and colleges should be provided with a librarian, a cultural instructor and a physical education officer in adddition to craft/productivity teacher.

(14) Almost total absence of linkage between Universities and our Industrial enterprises have created a big gap between producers and users of educational output. It should be made essential for every graduate in all courses to work as an intern/apprentice for six-months before getting the degree. This period can even be incorporated in three years degree course. A legal support by way of extending the apprentice act to cover students of colleges by all Industrial enterprises including banks, LIC and other financial institutions is necessary. Every Industrial enterprises should be required to take a minimum number of students as intern/apprentice and pay stipend to students for their services.

(15) An organic and bilateral institutional linkage is necessary to ensure meaningful participation of teachers and students of universities and colleges in social and economic development for a particular assigned area. The Planning Commission should assign a block or group of villages or mohallas for local development works on a long term basis. The present ad-hoc pattern of NSS should be replaced by a continuous programme of local area development when students and teachers can participate year-round.

(16) Every University's freedom to frame its own diversified curricula within the broad framework of goal of our Constitution should be fully respected. Each university should be fully supported in preparing multiple curricular models to raise the quality of higher education and help it to liberate itself from stagnation and obsolence.

(17) Inculcation of Moral and Spiritual values at all levels of education should be integral to all learning processes.

(18) Two years of +2 stage has proved to viable and has proved to be more susceptible to college admission rather than moving towards world of work. It is time to consider integration of high school and higher secondary stages together so that there is a continuous 5 year viable stage from 8th to 12th Standard available in secondary education. To begin with this should be promoted optionally.

(19) While there may be one Open University working in bilingual media of Hindi and English, it will be far more advantageous if every university simultaneously functions in Open University style with multitude of Correspondence Courses and Coninuing Education.

(20) Delinking of degrees and job has been announced by the Prime Minister. This is most welcome. But an immediate beginning should be made by declaring that all clerical posts will not require any University degree and schooling upto 10th will be enough. The Government may take its own entrance test.

(21) Similarly it is necessary to delink admission to Medical and Engineering colleges from requirement of certain marks in public examination of 12th class. Instead there should be a separate entrance examination the result of which alone will be considered for admission. Thus we can unburden the entire school system from preparing all students for medical, engineering and similar courses.

(22) Vacation system needs to be abolished for both teachers and students.

(23) While Science and Technology should continue to receive increasing support it should not result into neglect of Social Sciences and Humanities. Without adequate development of Social Sciences and Humanities there will be a great imbalance in human development.

At any rate what is more needed is the action plan for immediate implementation. ☐

Shri Venkataraman Addresses Convocation of Nagarjuna University

Text of the Convocation Address delivered by Shri R. Venkataraman, Vice-President of India, at the Nagarjuna University, Guntur, on February 3, 1985.

"It is a privilege for me to address today the faculty, alumni and educationists attending the Convocation of Nagarjuna University. Though this University was founded less than a decade ago, it is already mature in outlook and wisdom. This is not at all unexpected, as it derives its inspiration from the legendary Acharya Nagarjuna, an outstanding Budhhist scholar and scientist, who had established ancient temples of learning and monastic orders in this region during the latter half of the second or early third century A.D. The synthesis of old values with those of the modern is of immense significance to a new university which has its roots in the golden past of India. For dedicated as it is to the pursuit of knowledge and learning in a set academic frame, it should endeavour to retain a measure of flexibility for innovations in conformity with the latest thinking in the field of new education.

"It may be relevant for us to recall that Acharya Nagarjuna, a living legend in the annals of Buddhism, was not merely the founder and exponent of the MAHAYANAMADHYAMIKA creed of the Buddhist faith but was also a philosopher and an alchemist, combining in himself the qualities of a thinker and a doer in ancient India. Although there is some doubt whether Nagarjuna and his teachings related to one or two personalities, the body of knowledge we have inherited in his name underlines the convergence of theoretical with empirical sciences.

"As the enlightened one, Nagarjuna was, however, pre-eminently a great teacher, an educationist who fused idealism with such sciences as chemistry, medicine and experiments with the elixir of life. All around in the Nagarjunakonda, the invisible, intangible presence of Nagarjuna pervades and encourages the people to devote themselves to the acquisition of knowledge and wisdom in all its varied facets and dimensions.

"Recent excavations in the late 1920s have also illuminated the rich culture and commerce which flourished in the Nagarjunakonda. It had an impressive amphitheatre or a stadium and a swimming pool for sports, a playhouse and ample galleries for spectators. More importantly, it was a commercial centre for muslin woven at Masulipatam (or Maisolia, as it was then called) having a ready market in the Roman Empire. According to a Roman story, "anounce of muslin used to sell in Rome for an ounce of gold". Naturally, the region was dotted with stately buildings, pavilions and palaces on the one hand and monasteries, stupas and temples on the other.

"While it is hardly necessary for us to step into the complex area of an inquiry to unravel the personality or personalities of Nagarjuna as a teacher, philosopher, maker of miracles, magician, tantric scholar and a physician, as is recounted in the Tibetan and Chinese works, what I commend to your notice is that this University, multidisciplinary, youthful and adventurous, has inherited an extraordinarily rich cultural legacy. It is, therefore, best poised to embark on experiments boldly and innovatively.

"I understand that apart from the schools of humanities, sciences, the University has established a Department of Buddhist Studies for promoting research in Buddhist religion, art and philosophy and that the Royal Government of Bhutan has instituted a Chair for Mahayana Buddhist Studies and Research with the generous endowment of Rs. 5 lakhs. I am also happy to learn that the University has introduced special courses with contemporary relevance in Environmental Biology, Solar energy, alternative sources of energy, Mathematical Applications and Computer sciences, to name only

Dr. Shankar Dayal Sharma, Governor of Andhra Pradesh, presenting a scroll to Shri R. Venkataraman, Vice-President of India, at the convocation of Nagarjuna University.

a few. Programmes for learning through social and voluntary services evolved by this University will go a long way in preparing students to participate in community activities in later years. Today, study of foreign languages has become indispensable for keeping abreast of world developments in science and technology and I commend the endeavours of the University to open courses in modern foreign languages.

"The location of the University campus spread over 300 acres is particularly appropriate, as it commands the triangular belt formed by Vijayawada, Guntur and Tenali, the fertile heartland of the southern coastal districts of Andhra Pradesh. In the years to come, the University bids fair to transform itself into a major centre of learning and research as well as a dynamic matrix of social and cultural transformation in this part of the country.

"With the backdrop of its heritage dating back to the third century and named after one of the most illustrious philosopher-scientists of India, Nagarjuna University is assuredly best placed to give a new direction to higher education. Its recent attainments have also strengthened its capability to undertake redical reform of the education system in the light of latest thinking in the field of new education.

"But the question we might ask ourselves is; What is new education? In my opinion, the principal objective of the educational system is to contribute to character-building of its alumni. It must balance moral with vocational instruction, not merely transforming youth into better citizens but also better human beings. In this task, the faculty and alumni together must set new and higher standards of excellence by precept and example and conduct educational affairs on an everascending plane of endeavour. It is my conviction that this University, carrying the traditions of Nagarjuna, should encourage autonomous centres and ensure that its many colleges for undergraduate and postgraduate education are allowed free scope for development, spelt out by and in harmony with local traditions. In brief, education should fulfil the needs of the indigenous population, not alienate or uproot them from their immediate environment.

"I have often felt that compartmentalisation of education is not necessarily a desirable objective; it may contribute to specialisation but it can also lead a scholar into a sterile, disfunctional, abstruse and irrelevant area of knowledge. I feel that a student of pure sciences should be permitted to combine studies with those of pure arts. Students in our Universities are compelled to take a predetermined combination of subjects for their degree courses, whereas in American Universities the student is required to secure specified number of credits in any combination of subjects. Thus, the student is free to combine psychology, economics, engineering etc. for a degree course. This is the latest trend in new education and Acharya Nagarjuna, I am inclined to believe would have welcomed such innovations in this University.

"This form of flexibility calls for a new, if you like, revolutionary, approach to the formulation of curriculum of studies as well as to term and class arrangements. Initially, my suggestions may be regarded as somewhat difficult but I feel that a rearrangement of classes curricula is not beyond the genius of the faculty of this University. This region had spearheaded cultural and commercial ventures in the past. Why should it not continue this tradition of experimentation, of mixing philosophy with chemistry, humanities with sciences, literature with commercial arts.

"The motto of your University is "Satya Sarvan Pratishthitam". It represents the ideas and aspirations as well as the functions and the programmes of a centre of higher learning, dedicated to the pursuit of active excellence devoted to the welfare of all. A young and nascent institution, it seeks to fulfil the role of an ideal university, meaningfully participating in the great adventure of building a modern, creative and prosperous India of our dreams.

"You have demonstrated that limited floor space is no bar to excellence. Diligence and faith in your own efforts are evident everywhere. The greenery around helps generate an atmosphere of serenity and enables us to assess objectively the issues and problems facing us in an atmosphere of tranquility, free from pressures or extraneous factors. Youthful exuberance which may take the form of non-academic frolics occasionally should be channelled into sports. This would disarm critics and foster understanding and responsiveness of the student community. It is of paramount importance that the academic and the student community should be in close touch with each other, responsive to the other's needs in the co-operative pursuit for excellence in all walks of life. There should be a fusion of moral and material education. The best form of education is to make the youth into better human beings. It is the duty of education to bring out the inner spark of divinity in man.." □

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National Symposium on Recent Advances in Organic Chemistry at Kalyani University

A two-day National Symposium on Recent Advances in Organic Chemistry was held at Kalyani University during March 22 and 23, 1985. The Symposium was inaugurated by Prof. B.K. Bachhawat, Director, Indian Institute of Chemical Biology, Calcutta. Prof. Bachhawat in his inaugural address stated that the Organic Chemists should have more interactions with biochemists so that they together can unravel the mysteries of natural process in plants, animals and other living organisms.

In his welcome address, Prof. P. Sengupta, Chairman of the Faculty of Science of the host University stated that holding of this Symposium was a part of the Silver Jubilee Celebration of the Department of Chemistry of the University. Prof. Sengupta briefly described the developments in Chemistry made at this Department in all its branches during the last two decades. He stressed on the necessity of holding such National Symposia which provided an opportunity to the participants to gain an insight into the present research activities going on in our country.

The key-note address was delivered by Dr. S.C. Pakrashi, Deputy Director of I.I.C.B., Calcutta. Dr. Pakrashi briefly outlined the progress of research in Organic Chemistry in the past and outlined some front line areas where future organic chemists should profitably give more attention.

The Symposium included eight sessions in which five plenary lectures were delivered. In addition, seventeen original research papers were presented mostly by young researchers from all over India. The Symposium was attended by nearly 300 participants of which 195 delegates were registered participants.

In the closing ceremony on March 23, Prof. U.R. Ghatak (IACS, Calcutta) summed up the proceedings and delivered the valedictory address.

Panjabi Varsity seminar on zonal cultural centre

Punjab Governor Mr Arjun Singh who presided over a seminar on the Zonal Cultural Centre held in the Punjabi University announced that the centre will be located in Patiala. This was in sequel to the announcement that the Prime Minister Mr Rajiv Gandhi had made in Hussainiwala last month. He had said that a Zonal Cultural Centre representing all the States of the Zone would be established in Punjab.

The seminar was attended by Mr K.P. Singh Deo, Union Mnister of State for Culture, Mr Sagar Chand Nayyar, Minister for Culture, Himachal Pradesh, Mr Ali Nayak, Education Minister, Jammu & Kashmir, Mr Narinder Singh Bhati, Minister for Culture, Rajasthan, Mr Roshan Lal Tiwari, Chief Parliamentary Secretary, Haryana and Mr K. Banarji, Chief Commissioner, Chandigarh. Other participants included Dr S.S. Johl, Vice-Chancellor, Punjabi University, Patiala, Dr S.S. Bal, Vice-Chancellor, Guru Nanak Dev University, Amritsar, Mr Kartar Singh Duggal, an eminent writer and Dr M.S. Randhawa former Chief Commissioner, Chandigarh.

At the seminar a consensus emerged that culture could not be restricted by political and territorial boundaries. As a permeating force, it also cut across linguistic barriers.

The centre is expected to cost about Rs 5 crore and would have folk art. literature, music, dance, history and performing arts represented in its areas of activities.

On this occasion, an exıhqıtion of books published by the Punjabi University was held. While requesting the Governer to inaugrate this exhibition, Dr S.S. Johl, Vice-Chncellor informed him that this University had published more than 1100 books in Punjabi and is the largest publisher of its kind in the country.

Seminar on Aging in India at HAU

The Government should take urgent steps to evolve a package of programmes including tax concession, medical assistance, provision for ration card for the old people, observed Mr. D.R. Kohli, former Lieut. Governor of Delhi and presently Director, Help Age India, New Delhi. He was speaking on the occasion of the inaugural function of a seminar on "Aging in India: Challenge for Society" held at Hissar on 22nd April, 1985.

The three-day seminar was organised by the Department of Sociology of the Haryana Agricultural University (HAU) and Help Age India, New Delhi.

Referring to the research findings on the aging problems, Mr. Kohli said that the sensibilities of the aged are in no way less than those of the younger generation brought up in the same circumstances and environment. Expressing his concern at the fast growing population of the aged, Mr. Kohli said that the need for care for the aged had become all the more important because of the disintegrating joint family system in the country. The progressive change from the joint family to the concept of the nucleus family has aggravated the living conditions of the aged.

Mr. Kohli emphasised the need to develop a healthy and encouraging attitude towards the aged because "old age is not a disease, all it needs is more care".

He made a fervent plea to develop systems for the cause and care of the aged whereby medical attention, employment opportunities, and cheaper medicines could be arranged for them. He also suggested a universal pension scheme for the aged.

Mr. Kohli called upon the universities and the learned bodies to collaborate actively in solving the problem of the aged by undertaking surveys and commissioning research projects. The Haryana Agricultural University could take a lead in this matter through its Krishi Gyan Kendras which had a strong linkage with the villages.

Dada Ganeshi Lal, 85, the veteran freedom fighter and social worker of Haryana and a close associate of the late J.P. was honoured on this occasion. Mr. Ganeshi Lal pleaded that the old people could live better if their problems of mental tension and nutrition in the present economic context could be taken care of.

The seminar was attended by a large number of delegates from Haryana and adjoining states including sociologists, academicians, medical practitioners and the retired faculty members.

'Anjuman-85' at PAU

The Management Science Association of the Department of Business Management of Punjab Agricultural University organized its Annual Function named 'Anjuman-85' on 21st April, 1985 in a big way. Apart from the scheduled items, that is, Inter-Institutional Debate Competition, Collage Making Competition and Brain Tax the participants also regaled the audience with a lively cultural programme of wit and humour. Fourteen teams drawn from the various educational institutions from all over the Punjab attended the function.

The College of Agricultural Engineering of PAU bagged overall trophy.

Dr. Sukhdev Singh, Vice-Chancellor of PAU while inaugurating the function said that the students and staff of PAU had been in the fore-front in fostering a feeling of peace and tranquility. He said that mental exercise and entertainment provided by 'Anjuman-85' would be instrumental in fostering the spirit of National Integration amongst the youth. Dr. A.S. Atwal, Dean, Postgraduate Studies while presiding over the Debate Competition said that to achieve the goal of civilization in the present day socio-economic set-up indiscriminate transplanting of management system from one culture to another should be avoided and that the organization of such a function would arouse interest in the art and science of management relevant to our country.

Dr. Kulbir Singh, Dean of the College of Basic Sciences and Humanities gave away the prizes to the winners. He hoped that such competitions would provide a unique opportunity for the personality development of the students.

New VC of M.D. University, Rohtak

Dr. Ram Gopal, Professor of Sanskrit at Panjab University, Chandigarh, took over on 21st April, 1985, as Vice-Chancellor of Maharshi Dayanand University, Rohtak.

Born at Village Adampur in Haryana on 1st June 1925, Dr Ram Gopal received his higher education at the University of Delhi where he passed his M.A. in Sanskrit with 79 percent marks setting up a new record for the highest marks obtained. For this he was awarded Pandit Raghuvar Dayal Gold Medal by Delhi University and another Gold Medal named after Pandit Gauri Shankar Jaitley by Sanskrit lovers of Delhi. He was one of the four scholars to be awarded the All India Research Fellowship of Delhi University in 1950. In 1953 he obtained the first Ph.D. Degree in Sanskrit of the University of Delhi. From 1952 to 1959 he taught M.A. classes in Sanskrit at Delhi University, besides acting as Head of the Department of Sanskrit at Hansraj College, Delhi. In 1959 he was appointed Reader in Sanskrit at the Panjab University, Chandigarh and was elevated to Kalidasa Chair of Sanskrit at the Panjab University in 1974.

Dr. Ram Gopal

He has written about a dozen standard works on Sanskrit Research and published over a hundred research papers in important journals. In recognition of his contributions in the realm of Sanskrit studies, he was awarded the Independence Day Award, Certificate of Honour in Sanskrit, by the President of India in 1971 and in the same year he was honoured by the Haryana Government also with its highest literary award in Sanskrit. In appreciation of his profound Vedic scholarship, he was invited to preside over the Vedic Section of All India Oriental Conference in 1966. His magnum opus "Vaidika Vyakarana" in two volumes was selected by the University Grants Commission for the National Award of Rs. 10,000/- instituted by the Ministry of Education, Government of India to encourage original works of high standard in Indian Languages. On the occassion of the International Congress of Orientalists held in New Delhi in 1964, he was honoured by the Birla Education Trust, New Delhi along with some selected eminent Sanskrit scholars of the world. □

Nagaland likely to establish job-oriented university

It is reported that the Planning Commission has, in principle, agreed to the proposal of the Government of Nagaland for setting up a non-traditional job-oriented university in the State. A sum of Rs. 3 crores has also been proposed in the plan allocations by the State Government for the year 1985-86.

The Government of Nagaland has already set up a committee to prepare a Master Plan for the proposed university. This committee is likely to identify the curricula and the faculty besides assessing the requirement of teachers and other staff. The emphasis is likely to be placed on the rural character of the area.

Karnataka State Universities Act likely to be amended

According to press reports, the Education Minister of Karnataka, Mr. M. Raghupathy, disclosed that the State would effect some changes in the Karnataka State Universities Act as per suggestions made by the University Grants Commission. This appears to be a sequel to a meeting that the Education Minister had with the Union Education Minister, Shri K.C. Pant and Prof. Rais Ahmed, Vice-Chairman, UGC in the matter of funds for the development of the Mangalore and Gulbarga Universities in the State. It is reported that the grants would be received by these universities from the University Grants Commission as soon as the Act is amended.

Oil Research Institute at Anantapur transferred to JNTU

The State Government of Andhra Pradesh has ordered the transfer of Oil Technological Research Institute at Anantapur to Jawaharlal Nehru Technological University, Hyderabad with effect from April 1, 1985.

This transfer has been ordered with a view to enable the Institute to draw up suitable schemes and programmes in collaboration with Institutes like the Indian Council of Agricultural Research, the Council of Scientific and Industrial Research, etc. and for developing the faculty in Chemical Engg. Technology with special emphasis on oils and fats.

The Oil Technological Research Institute at Anantapur was founded in the year 1949 with a view to the development and introduction of new technologies in extraction of oil from various seeds and their utilisation.

India-Algeria cooperation in education

India and Algeria, it is reported, have agreed to cooperate in the field of higher education particularly in technical and architectural studies.

Further, Indian teachers are likely to be deputed for teaching in Algerian Institutes of Higher Education particularly in the field of technology. This, it is reported, was agreed to at the end of 3-day talks between Indian and Algerian delegates in New Delhi recently.

M.Phil degree in oriental studies

For the first time in the country MPhil degree courses in manuscriptology and oriental studies are likely to be introduced by the Asiatic Society of Calcutta. The Asiatic Society itself is likely to soon get the status of a 'Deemed University'.

Eight fellowships each of the value of Rs. 1,000 per month would be offered for students in manuscriptology and six in oriental studies.

Hospital building for the staff of Tamil University

An eight-baded hospital with sections for Siddha and Allopathic treatment is to be inaugurated at the new campus of Tamil University at Thanjore for the benefit of the teachers and the university employees by Hon. Dr. M. P. Sivagnanam, Chairman, Tamil Nadu Legislative Council. This hospital will also be used for clinical research. The staff contributed about Rs. 5300 and the balance of 2.5 lakhs was met by the Tamil University.

Under water archaeological excavation in Thoniturai by Tamil Varsity

Thoniturai, near the Paamban bridge at Mandapam, was a well known port in the late tenth century and after, but is now submerged under the ocean. An experimental digging in the ocean to find out whether any remnants are available has been organised by the Tamil University which has set up a Centre for underwater archaeology at Mandapam. Near the bridge an early temple of Vinayaka with his consort on his left side and the elephant, very rarely mentioned as his carrier in literature, is found. It is a rare temple monument not noticed earlier. After this excavation, Tondi, an old port of Sangham fame is to be excavated.

Silver Jubilee of Sir Vithaldas Thackersey College of Home Science

The Silver Jubilee Celebrations of Sir Vithaldas Thackersey College of Home Science conducted by the S.N.D.T. Women's University, were inaugurated by Dr. (Smt) Madhuri Shah, Chairman, U.G.C. on 5th January 1985. A number of publications were released on the occasion. An extensive exhibition put up by the students of the college along with an exhibition by manufacturing and sales companies were organised. The Silver Jubilee year concluded with a seminar on 'Current Developments and Research in Home Science' which was inaugurated by the Sheriff of Bombay, Shri Mohanbhai Patel. Dr. (Smt.) J.H. Trivedi, Vice-Chancellor, delivered the valedictory address.

The Maharashtra Government gave a special grant to develop a documentary film on 'Home Science for Life and Career' to commemorate the occasion.

The college proposes to set up a Consumer Education Counselling Centre as a community service and to serve the research needs.

Seminar on Indian National Congress and the freedom struggle at SNDT

To commemorate the centenary of Indian National Congress Party, the S.N.D.T. Women's University in collaboration with the Western Regional Centre, Indian Council of Social Science Research, Bombay, organised a seminar on 'Indian National Congress and the freedom struggle: 1885-1967 from March 23-24, 1985. The seminar, with Dr. (Smt.) J.H. Trivedi, Vice-Chancellor, S.N.D.T. Women's University as Chairperson, was inaugurated by Smt. Kamaladevi Chattopadhyay. Prof. Ram Joshi ex-Vice-Chancellor, University of Bombay delivered the key note address.

The purpose of the seminar was to bringforth the historical development of the Congress Party from its inception, and its contribution to the political health of the country. Some very interesting papers presented related to (i) the role of Marathi Press in the freedom struggle, economic background of Indian Natianal Movement, economic aspects of Indian nationalism, Swadeshi Movement and Ahmedabad's role, splits in Congress, Role of Parsee women, INC and women 1885-1947, INC in relation to the Communist and other Leftist Parties, etc. Dr. John Corrieo Afonso, Director, Heras Institute, Bombay, gave the valedictory address.

New sports institute planned for Manipur

During the 7th Plan period Manipur will have a Patiala type NIS Institute. The seeting up of the Institute, which is likely to benefit young sports men and women in the area, has already been approved by the Union Government.

This was revealed by Shri R.K. Jaichandra Singh, Union Minister of State for Sports and Youth Affairs, while replying to felicitations given to him by the Manipur University recently. Shri Jaichandra Singh is also a member of the Syndicate of the Manipur University.

CALENDAR OF EVENTS

Proposed Dates of the Event	Title	Objective	Name of the Organising Department	Name of the Organising Secretary/Officer to be contacted
May 25-June 8, 1985	UGC Sponsored Workshop on "A Possible Methodology for Teaching English for Communication at undergraduate level".	To explore the possibilities of evolving and developing new strategies in the teaching of core English for communication at the undergraduate level and also to effect improvement of curricula, teaching methods, examination reforms, etc.	Faculty of English, Gandhigram Rural Institute, Gandhigram	Shri M.R. Kubendran, Faculty Member.
June 3-8, 1985	UGC Sponsored Symposium on Arthur Miller as representative of American Drama.	—	Govt. Postgraduate College, Dharamsala (H.P.)	Dr. Atma Ram, Principal
November, 28-29 1985	**International Conference on New Technologies in Higher Education**	**To assess the possibilities of the now available new technologies in the background of the broad social and cultural context and the state and trends of Higher Education in India and other developing countries**	**Association of Indian Universities, IIT/Delhi, JNU, Jamia Millia and University of Delhi**	**Prof. Tapas Mazumdar (JNU), Prof. S. Shukla (Jamia Millia), Prof. L.R. Shah (JNU)**
December 12-14, 1985	Asia Pacific Symposium on Wind Engineering	Nature of wind and effect on structures and study of damage and its socio economic implications	Civil Engg. Department, University of Roorkee, Roorkee	Dr. S. K. Pathak, Organising Secretary
December 16-18, 1985	Indian Geotechnical Conference	To advance the state of knowledge about the geotechnical engineering and to give definite direction to the future research work	Earthquake Engg. Department, University of Roorkee, Roorkee	Dr. V. H. Joshi, Organising Secretary

News from Agril. Varsities

Seminar on fertilizer use in dryland at BHU

A two-day seminar on "Fertilizer use in dryland", organised by the Institute of Agricultural Sciences, Banaras Hindu University concluded recently.

Dr. R.P. Singh, Programme Leader, Farming system at ICRISAT in his valedictory address summarised the findings of various scientists and stressed upon the importance of fertilizer use for increasing and stabilising production and productivity of dryland crops. He said that increasing the water and fertilizer use efficiency should be the objective of all crop production systems and environment. The role of integrated management of plant nutrients and water in improving productivity in rainfed areas was highlighted. Dr. Singh highlighted that taking the amount and period of water availability into account, cropping systems and fertilizer schedule could be designed to match the crop growing environment. Efficacious land treatments make more water available in the soil profile for crop growth, improved soil and crop management practices enable to get the best out of the available resources.

As fertilizer was a costly input, a recommendation was made to increase its use-efficiency besides use of organic manure and legume involving rotation. Dr. Singh told that in rainfed conditions pulse production could be augmented by proper tillage, water harvesting, use of soil amendment and mulching. In light soils, use of farmyard manure was recommended. Inoculation of seeds of legumes with rhizobium and of cereals with Azospirillum was told to be a promise in economising nitrogen use in crops.

Plant protection, soil conservation and crop management practices were discussed and recommendations were made for different crops. Green manuring practise was also considered to be useful in drying agriculture.

Bangladesh delegation at HAU

A high level delegation from Bangladesh Agricultural University, Mymensing, Bangladesh visited the Haryana Agricultural University on April 16 and 17. During their stay the members of the delegation visited the various colleges and research farms of the University. They also had detailed discussions with senior officers of the University. To see the impact of transfer of technology they visited the village Rampura which has been adopted by the University under its lab to land programme. During their meeting with the Vice-Chancellor, Shri L.D. Kataria, the delegation members lauded the research and extension work that is being done at this University and further said that during the 15 years of its existence the University had earned a name at national and international levels.

The purpose of their visit was to see the linkage between agricultural universities and different organisations, extension departments and allied areas. The members of the delegation included: Professor, Dr. Ashraf Ali Khan, Director Bangladesh Agricultural University Research Systems (Baures); Professor, Dr. M.A. Hasnath, Coordinator, Committee for Advanced Studies & Research; Dr. Abdul Halim, Director of the Graduate Training Institute; Mr. A K M. Mokbul Islam, Registrar, Bangladesh Agricultural University, Mymensing, Bangladesh.

Mechanization must for farm progress

Mr. Chandra Mohan, Vice-Chairman and Managing Director of Punjab Tractors Ltd, Mohali while addressing the Annual Convocation and Prize Distribution Function of the College of Agricultural Engineering of Punjab Agricultural University said that 14 Indian manufacturers were producing about 85,000 tractors every year. Besides tractors, a wide variety of agricultural machines, tractor drawn potato and sugarcane planters, reapers, threshers and self-propelled combines were being manufactured in the country in addition to specialized implements needed for the diversified farming. The fundamental research behind the urge for tractors was that tractor denoted a major change point in the developmental process of a farmer where agriculture moved from traditional and nature-bestowed to man controllable and commercial venture.

Mr. Mohan said that while the seed, irrigation and fertilizers were immediate like an antibiotic injection, tractors were also a slow process of health building through continuous vitamin dosage. Mechanization, in addition to new seeds and other farm inputs, was the major component of the process of change. Congratulating the young graduates, Mr. Mohan urged them to study the needs of the farmers and the agriculture.

Dr. Sukhdev Singh, Vice-Chancellor of the PAU in his presidential remarks said that Swaraj tractor manufactured by the Punjab Tractors had won International repute and it was now being exported to many foreign countries. The Vice-Chancellor further said that farm engineering graduates should take up jobs with the farm machinery manufacturing units and they should not hanker after Government jobs which was a legacy of the colonial rule.

Earlier, the Vice-Chancellor awarded B. Tech. degrees,

We Congratulate...

Dr. M.N. Desai who has taken over as Vice-Chancellor of the M.S. University of Baroda with effect from 17th April, 1985.

Medals and Merit Certificates to the students while Mr. Chandra Mohan gave away the prizes.

New rice variety evolved at Pantnagar

The Rice Breeders of the Pantnagar University have developed an early maturing, photo insensitive, high yielding rice variety 'MANHAR' suitable for irrigated areas in the entire plains of Uttar Pradesh under transplanted conditions.

The semi-dwarf lodging resistant variety having long slender grains with good cooking quality is moderately resistant to bacterial leaf blight and tolerant to white backed plant hopper and capable of yielding about 60 qtls./ha.

News from UGC

INSAT 1-B Programme of UGC

Between 8th and 15th May, 1985, the following schedule of telecasts on higher education through INSAT-1B under the auspices of the University Grants Commission will be observed. The programme is of one hour duration every day from 12.45 p.m. to 1.45 p.m. (Repeated from 4 p.m. to 5 p.m.) and will be available on the TV network throughout the country. For the viewers in Delhi and surrounding areas, these programmes can be seen on the second channel.

8.5.85

"Introduction to Computers-III"
"Introduction to Computers-IV"
"Precision and Optical"
"TV Satellite File."

9.5.85

"Polymede-II"
"Test Tube Plants"
"Introduction to Animal Behaviour"
"Science World"

10.5.85

"Comet-I"
"Comet-II"
"Sky Lab: Out Past in Space"
"Science World"

11.5.85 (Second Saturday)

No Telecast

12.5.85 (Sunday)

No Telecast

13.5.85

"Computer Application"
"History of a Grain of Salt-1"
"Green House Effect"
"Science World"

14.5.85

"To Communicate is the beginning."
"Voyage En Gaule"
"Science World"

15.5.85

"History of a grain of Salt"
"The Heart of the Atom"
"Future of Atomic Power"

Sports News

II phase of training for Kobe Universiade

The Dept. of Sports have approved the II phase of the coaching programme for preparing the Indian Universities' Contingent for Universiade-85 to be held at Kobe (Japan) from August 24 to Sept. 4. The programme consists of 3 series of coaching camps each in Athletics and Volleyball. The dates of the camps are : **Athletics** : Ist Camp from 3.6.85 to 2.7.85; 2nd Camp from 3.7.85 to 31.7.85; 3rd Camp from 1.8.85 to 21.8.85. **Volleyball**: Ist Camp from 6.5.85 to 2.6.85; 2nd Camp from 3.6.85 to 2,7.85.

The following have been selected to undergo training in the 2nd phase of the coaching programme.

Athletics (Men)

(1) Bhupinder Singh, 800 M. Punjabi Univ; (2) Arvind Panna 5000, Ranchi Univ; (3) H.K. Patel, Long Jump, Sambalpur Univ; (4) Vikram Singh, Triple Jump, B.H.U.; (5) Avtar Singh, Shot Put, G.N.D.U; (6) Eashan S.D., Shot Put, Bangalore Univ; (7) Kamapreet Singh, Discuss Throw, Pbi. Univ; (8) Surjit Singh, Discus Throw, GNDU; (9) Kamaldeep Singh, Discus Throw, Pbi. Univ; (10) Ajaypal Singh, Hammer Throw, Kurukshetra Univ; (11) Ranjit Singh, 20 K.M. Walk, Meerut Univ: (12) Sant Dev, 20 K.M. Walk, Delhi Univ.

Women

(1) P.Nachappa, 400 M, Bangalore Univ; (2) Alayamma N.V., 800 M. Jiwaji Univ; (3) Surjit Kaur, 3000 M., GNDU; (4) Charu Lata, 3000 M., Nagpur Univ; (5) Gurmeet Kaur, Discus Throw, GNDU.

Volleyball

(1) Parminder Singh, Ranchi Univ., (2) Achal Tirkey, Ranchi Univ; (3) R.N. Upadhyay, B.H.U; (4) Akram Khan, Ravishankar Univ; (5) Rajender Ray, Guru Ghasidhas; (6) Kamal Kumar Bhasin, Bihar Univ; (7) Arvind Kumar, Patna Univ; (8) Harilal S.T. Kerala Univ; (9) Jyothish T.C., Kerala Univ; (10) Suresh B.R. Bangalore Univ; (11) Hari Krishanan, Bharathidasan Univ; (12) P.V. Ramu, Andhra, (13) K. Venkit Rami Reddy, Andhra Uuiv; (14) Gajraj Singh, Rani Durgawati; (15) Kardus Hussain, Marathwada; (16) Sandeep Sharma Kurukshetra; (17) Sahi Ram, Kurukshetra; (18) Jagadish Chander Kurukshetra Univ; (19) Sukhpal Singh, Panjab; (20) Balbir Singh, Panjab: (21) Ravinder Pal Singh, Allahabad; (22) Ajay Kumar Shukla, Allahabad Univ.

RANI DURGAVATI VISHWAVIDYALAYA

JABALPUR

No. Estt/85/6 **Dated: 9-4-1985**

ADVERTISEMENT

Applications together with detailed bio-data are invited on plain paper for the post of a Senior Research Fellow on a fixed Salary of Rs. 950 P.M. for a period upto 3 years under a research project of the Deptt. of Space, Govt. of India, on or before 15-5-1985. The applications should be accompanied with a postal order of Rs. 5 payable to the undersigned.

The candidates possessing M.Sc./M.Phil/Ph.D. degree in Mathematics specially in any branch of analysis or Numerical Analysis may apply for the above post. The candidates should send their applications to Prof. H.P. Dikshit, Project Director, P.O. Box 72, Rani Durgavati Vishwavidyalaya, Jabalpur.

The University reserves the right to fill up or not to fill up the above post and/or to call selected candidates for interview. No T.A./D.A. will be paid to the candidates.

R.N. Tripathi
REGISTRAR

ANNAMALAI UNIVERSITY

ADMISSION NOTIFICATION

M.B.A. PROGRAMME—1985-87

Applications are invited for admission to Two Year Full Time, M.B.A., (SEMESTER) Programme, 1985-87, commencing from June 1985. Application form and Prospectus can be had from the Registrar, Annamalai University, Annamalainagar, 608 002, from 15th April 1985, on written requisition letter in person or by post. All requisitions shall be accompanied by a crossed demand draft or I.P.O. to the value of Rs. 50 (Rupees fifty only) obtained not earlier than 1st April 1985 and drawn in favour of Registrar, Annamalai University. The requisition for an application by post shall be accompanied by a self addressed envelope of size 30cm × 12.5 cm., stamped to the value of Rs. 1.30 for ordinary post.

Eligibility:

To be eligible for admission an applicant must be a graduate of a recognised University, having secured 55% in B.A., B.Com., B.B.A. or First Class in B.Sc., B.E., B.Sc. Agri. or an equivalent degree.

Candidates appearing for the Final Degree Examination in April/May/1985 may also apply. However, these candidates will have to produce the proof for having passed their degree and satisfy the conditions of eligibility, before interview which will be around 10th June 1985.

The application form is not transferable and the candidate should obtain it in his/her name only.

The University will not be responsible for any postal delay.

Last Date for Receipt of Applications by the University : 15th May 1985.

AR. Lakshmanan
REGISTRAR

INSTITUTE OF MATHEMATICAL SCIENCES

MADRAS-600113

PREDOCTORAL RESEARCH FELLOWSHIPS IN MATHEMATICS AND PHYSICS

The Institute of Mathematical Sciences invites applications from M.Sc. graduates in Mathematics/Physics for Junior Research Fellowships for research in Mathematics and Theoretical Physics leading to the Ph.D. Degree. Only candidates with an aptitude for research and strong motivation towards research career need apply. Although the required qualification is M.Sc. or an equivalent degree, students in their final year of M.Sc. and, in very exceptional cases of highly talented students, even B.Sc.s will be considered.

Prescribed application form can be obtained by writing to The Registrar, Institute of Mathematical Sciences, T.T.T.I. Tharamani P.O., MADRAS-600 113, with a 23×10 cms. self-addressed stamped (Rs. 1.10) envelope. The last date for receipt of completed application form is 31st May 1985.

The final selection of Junior Research Fellows will be made on the basis of an entrance test and those called for the test will be paid three times the second class train fare from their place of residence to Madras. Selected Junior Research Fellows will be paid a fixed monthly stipend of Rs. 1,000. The admission will be initially for a period of one year and the continuation of the fellowship will depend on the candidate's academic progress.

ANNAMALAI UNIVERSITY

NOTIFICATION

Applications are invited for admission to M.P.Ed. and B.P.Ed. Course for the academic year 1985-86. Application form and prospectus can be had from the Registrar, Annamalai University, Annamalai Nagar on written requisition letter in person or by post from 1-4-85. Requisition should be accompanied by a demand draft or postal order to the value of Rs. 20 (obtained not earlier than April 1985) drawn in favour of the Registrar, Annamalai University payable at Annamalai Nagar, for the courses mentioned above. The requisition for an application form by post should be accompanied by a self addressed envelope of size 30 cm × 12.5 cm stamped to the value of Rs. 1.30 for ordinary post with the name of the course for which the application form is required superscribed boldly on the envelope.

The application form is not transferable and the candidate should obtain it in his name only.

The last date for receipt of filled in applications by the University is 30-6-85.

The University will not be responsible for any postal delay.

AR. Lakshmanan
REGISTRAR

HARCOURT BUTLER TECHNOLOGICAL INSTITUTE
KANPUR-2

ADVERTISEMENT NO. ESTT. 7/1985.

Applications are invited for the following faculty and other positions in the Institute. The posts are permanent unless indicated otherwise and the appointment will be made on probation basis. All the pensionary benefits are admissible according to the rules of the Government of Uttar Pradesh. Higher start may be given to the deserving candidates. The scales of pay are noted against them:—

(i) **Professor :** (Rs. 1500-60-1800-100-2000-125/2-2500)

1. **Leather Technology :** One post (Temporary likely to be made permanent)
2. **Computer Science :** One post (Temporary likely to be made permanent).

Qualifications

An eminent scholar with published workof high quality actively engaged in research in the field of relevant Technology. Ten years experience of teaching and/or Research. Experience of guiding research at Doctorate level.

'OR'

An outstanding Engineer/Technologist with established reputation who has made significant contribution to knowledge. (Those who have already applied against our Advt. No. 15/1984 need not apply again).

(ii) **Asstt. Professor :** (Rs. 1200-50-1300-60-1900).

1. **Leather/Technology :** One post (Temporary, likely to be made permanent).
2. **Computer Science :** Two post (Temporary likely to be made permanent).

Qualifications

Good academic record with a Doctorate degree in the relevant field. About 5 years experience of teaching and/or research and development.

Provided further that candidates not possessing Ph.D. may be considered if they have at their credit equivalent research published work or design/development work of high order either in an Institution or in an industry.

In the case of persons to be recruited from industry or Professional field, candidate should possess good academic record with recognised professional work of about 7 years which should include innovation and/or research and development. (Those who have applied against our Advt. No. -15/1984 need not apply again).

(iii) **Asstt. Professor-Humanities :** One post permanent. (Rs. 1200-50-1300-60-1900)

Qualifications

(a) Good academic record with a doctorate degree in Economics/Industrial Management or equivalent published work and active engagement in research or innovation in teaching methods or production of teaching materials; and

(b) Five years experience of teaching or research including atleast three years as Lecturer or in an equivalent position.

Provided that the requirement contained in clause (b) may be relaxed in the case of candidates who, in the opinion of the selection committee, has outstanding research work to his credit.

(iv) **Lecturer :** (Rs. 700-40-1100-50-1600)

1. **Oil/Paint Technology :** Two posts (permanent but appointment shall be made on temporary basis).
2. **Mechanical Engg :** Two posts (one for Thermal Power and one for Machine design.) The posts are permanent but appointment shall be made on temporary basis.
3. **Chemical Engg. :** One post (permanent but appointment shall be made on temporary basis).
4. **Computer Science :** Two posts (The posts are temporary likely to be made permanent).
5. **Electrical Engg. :** One post (Permanent).

Qualifications

(a) Master's degree in appropriate field in Engg./Tech.

(b) Consistently good academic record with first class Bachelo'rs degree in Engineering Technology and/or Master's degree level.

(c) One year relevant Professional experience outside academic/research Institutions.

Note : In the case of Lecturer in Electrical Engg. preference will be given to those having specialization in Electronics.

Having regard to the requirement of emerging field of Engineering and of developing interdisciplinary programme, the requirement of Engineering degree may be waived in the case of otherwise qualified candidates.

Provided further that if a candidate does not possess professional experience or a person possessing such experience is not found suitable, the person appointed will be required to obtain desired professional experience within a period of five years of his appointment failing which he will not be able to earn further increments until he fulfils the requirements. (Those who have applied for the post of lecturer, Oil and Paint Tech, against our Advt. No. 15/1984 need not apply again).

(v) **Dy. Registrar :** (Rs. 850-40-1050-EB-50-1300-60-1420-EB-60-1720)

One post (permanent but appointment shall be made on temporary basis).

Qualifications:

(a) A Bachelor's degree in Arts, Commerce, Science, Engineering or Technology.

(b) Atleast 5 years experience of office working in a responsible capacity including academic work, knowledge of State Govt. rules.

(c) Experience of similar work in a technical Institution or Govt. Organisation dealing with establishment, General Administration etc.

Note : (1) Qualifications may be relaxed in case of exceptionally deserving candidates.

(2) The number of posts in various categories may increase or decrease.

Application in duplicate on prescribed application form, from the candidates for the above posts should reach the undersigned by **31-5-1985.** The application form can be had free of cost by sending a self addressed envelop 10" x 4" duly stamped Rs. 1.30 paise. The application must be accompanied by crossed Indian Postal Order of the value of Rs. 10.00 for the post of Professor, Rs 7.50 for Asstt. Professor and Rs. 5.00 for the post of Lecturer and Dy. Registrar in favour of the 'Director, H.B.T. I., Kanpur' payable at Head Post Office, Nawabganj, Kanpur-2.

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THESES OF THE MONTH

A list of Doctoral Theses Accepted by Indian Universities

HUMANITIES

Philosophy

1. Bhattacharya, Shipra. *A study of Hellenstic Earrings*. U Poona.
2. Bhave, Shrikrishna Madhav. *A philosophy of mathematics with special reference to the mathematical reality and the mathematical activity*. U Poona.
3. Joshi, Arvind N. *Rabindra Nath Tagore's philosophy of primary education*. U Poona.
4. Kulkarni, Pralhad G. *The concept of mind in Indian philosophy*. U Poona.
5. Nathan, Parimala. *St. John of the Cross and Manikkavacagar: Some aspects of their mystical lives*. U Madras.
6. Negi, Dhrub Bhagat. *Changing pattern of political leadership among tribals of Kinnaur*. HPU, Shimla.
7. Tiwari, Ravi. *A comparative study of Paul Tillich and Sankara with special reference to the concept of being*. RDV, Jabalpur.
8. Vadaparayana, G. *A comparative study of the problem of freedom with special reference of Jean Paul Sartre and Jiddu Krishnamurti*. SVU, Tirupati.
9. Yog Raj. *Babur's nobility and administration in India*. HPU, Shimla.

Religion

1. Tsering, Phuntsok. *A study of the rise of sects of Buddhism in Tibet*, 800 *AD to* 1600 *AD*. U Delhi.
2. Veena Kumari. *Buddhist doctrine in sanskrit mahakavyas, till* 400 *A.D.* U Delhi.
3. Vidhya. *A psycho ethical analysis of satyagrah in Buddha's and Gandhian thought*. U Delhi.

Fine Arts

1. Ghuman, Narinder Jit. *Production styles in hindi and punjabi theatre since* 1960. Pbi U, Patiala.

Language & Literature

English

1. Bailur, Jayanti. *The theme of human relationships in the novels of R. Prawer, Jhabvala, Kamala Markandaya and Nayantara Sahgal*. Pb U, Chandigarh.
2. Bains, Mohini Rattan Singh. *The search for redemption in the works of Flannery O' Connor*. Pb U, Chandigarh.
3. Chaddha, Rajni. *Social realism in the novels of John Steinback*. Meerut U.
4. Chopra, Ranjit Kaur. *The symbiosis of drama and imagery in Henry James*. Pbi U, Patiala.
5. Eakambaram, N. *The grotesque in the selected works of Eudora Walty and Flannery of Cornor*. U Madras.
6. Jagjit Singh. *Stylistic analysis of G.S. Shaw's historical plays*. Pbi U, Patiala.
7. Kamlesh Kumari. *Hinduism and the Indo-english novel*, 1947-1977. Pb U, Chandigarh.
8. Mukhopadhyay, Lakshmisri. *The time theme in Keat's poetry*, U Calcutta.
9. Ranbir Singh. *The semiotics of Faulkner's the Sound and the Fury*. Pbi U, Patiala.
10. Roy, Probodh Chandra. *A study of the Choric characters in Shakespeare's plays*. Gauhati U.
11. Sahu, Dharanidhar. *Theme of alienation in the plays of Tennessee Williams*. Utkal U, Bhubaneswar.
12. Sandilya, Bishnupada. *Perception of nature in the poetry of Robert Frost: Its roots in the earlier American response to nature*. IIT, Kharagpur.
13. Sarkar, Hirendranarayan. *Pessimism in the English novel*, 1918-39. U Calcutta.
14. Shintre, Hari Vinayak. *A stylistic study of Blake's contrary songs*. U Poona.
15. Singh, Khumukcham Tobma. *Industrial revolution andthe thematic pattern in Victorian novel*. Gauhati U.
16. Sukhbir Singh. *The image of the survivor in contemporary American fiction: Saul Bellow, Bernard Malamud, John Updike, Kurt Vonnegut, JR.* U Hyderabad.
17. Vishwanadham, M. *A critical appraisal of the fiction of Anita Desai*. RSU, Raipur.
18. Visweswara Rao, C.R. *The plays of T.S. Eliot: A study in religious themes and dramatic art*. SVU, Tirupati.

Sanskrit

1. Bag, Subimal. *Rigvedio soma sacrifice*. U Calcutta.
2. Basheer, S.B. *The marmas in Ayurveda and their explanation according to modern anato*. U Poona.

3. Bhardwaj, Ramesh Chandra. *A study of nyayaratnamala*. U Delhi.

4. Bhatt, I.B. *Cultural study of Srimad Bhagvata*. Saur U, Rajkot.

5. Choudhury, Pratima. *A critical exposition of Siddhichandra Gani's kavyaprakasakhandana*. Gauhati U.

6. Deka, Nakul Chandra. *A critical study of the Prabodhachandrodaya of Srikrsnamisra*. Gauhati U.

7. Gupta, Sunita. *Srimadbhagvat ke paripreksya mein advaita vedanta*. Pb U, Chandigarh.

8. Karmakar, Rabindranath. *The sanskrit puranas: As the source of Ancient Indian geography*. U Calcutta.

9. Kaushik, Krishan Sharma. *Sanskrit mein aucitya ka saiddhantik evam prayogik paksha*. Pbi U, Patiala.

10. Krishanamurthy, Radha. *Sivatattvaratnakara: A cultural study*. U Poona.

11. Ojha, Jaya. *Siddhanta bindu: Ek adhyayan*. U Delhi.

12. Palge, Malhar P. *Comparative study on vishadravyas in Bhirihedtrayee*. U Poona.

13. Pandey, Ram Lakhan. *Satarhveen shati ke sanskrit mahakavyon ka vikasatamak anusheelan*. HS Gour, Sagar.

14. Ramesh Chand. *Sanskrit natya sahitya mein hasya vyangya bhasa se Raj Shekar tak*. Pb U, Chandigarh.

15. Sarangi, Artafrana. *Samrajlaksmipithika: A study*. U Poona.

16. Satagopan, N.S. *The paduka sahasra of Sri Vedanta Desika: A study*. U Madras.

17. Sharma, Anita. *Cosmology in the Vishnu Purana*. U Delhi.

18. Sharma, Sharda. *Bhatta Chintamani ke Tarkapada ka adhyayan*. U Delhi.

19. Sharma, Shashi Bala. *Dharmarajadhvarindra ka vedant pramana mimansa mein yogdan*. U Delhi.

20. Shitre, Arun R. *The study of effect of rtunkopta on different deha prakrities*. U Poona.

21. Shrivastava, Indira, *Bhavbhuti ke rupakon ka natya shastriya vivechan*. HS Gour, Sagar.

22. Shukla, Virendra Kumar. *Trimanikya Dev Suri Virchit Nalayam ka sameekshatmak adhyayan*. Meerut U

23. Tripathi, Pratibha. *Pramukh smritiyon evam dharm sutron mein aparadha evam danda vidhan*. U Delhi.

24. Tulsi Ram. *A study of the contributions on Saunaka to the vedic literature*. Pb U, Chandigarh.

25. Vaidya, Gangadhar M. *Ashtangyog sambandh*. U, Poona.

26. Vaidya, Shrihari S. *A critical study of Dhanvantari Nighantu*. U Poona.

Punjabi

1. Harbans Singh. *Punjabi sateji kavian de pripakhe vich Babu Feroz Deen Sharf dee kavita da adhyayan*. Pb U, Chandigarh.

2. Hari Singh. *The concept of parammanukh in the poetry of Guru Nanak*. Pb U, Chandigarh.

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Hindi

1. Bhatia, Mangat Ram. *Neeti parayan pustak malaon ka mulyankan: Manav mulya kee drishti se*. Pb U, Chandigarh.

2. Chawla, Madhu. *Meera Padavali ka shailly vaigyanik adhyayan*. Meerut U.

3. Dal, Singar Ram. *Banking vishayak hindi ke paribhashikon kee sanrachana aur sampreshniyata ka adhyayan*. Pb U, Chandigarh.

4. Das, Banamali. *Fakirmohan and Premchand with special reference to Chhamana Athaguntha and Godan*. Utkal U, Bhubaneswar.

5. Das, Godhuli. *A remedial grammar of hindi for oriya speakers*. RSU, Raipur.

6. Deotale, Chandrakanta. *Muktibodh ka chintan aur kavyon ka mulankan*. HS Gour, Sagar.

7. Jagdish Kaur. *Nai kahani mein nari swatantray ka swar*. Pbi U, Patiala.

8. Jain, Pawan Kumar. *Mahavir vani ke alok mein hindi ka sant kavya*. Meerut U.

9. Jatav, Parmanand. *Sathottari hindi upanyason mein rajnaitik chetna ka anusheelan*. HS Gour, Sagar.

10. Mahrotra, Anita. *Hindi sufi kavyon maein varah mnu varanan kee parampara ka anusheelan*. Avadh U.

11. Maliksab, Madari Baseeruddin. *Dharmveer Bhart: Vyaktitva aur krititva*. Kar U, Dharwad.

12. Mathur, Jalaji. *Hindi anchalik upanyas: Bhasha vaigyanik bhumika*. U Hyderabad.

13. Om Prakash. *Prem Chand kaleen upanyason per Arya Samaj ka prabhav*. Pb U, Chandigarh.

14. Parmeshwari Devi. *Prasadottar natakon mein samaj* U Jammu.

15. Patnaik, Geeta. *Sanvalpuri evam Chattisgarh lok geeton ka tulnatmak adhyayan*. HS Gour, Sagar.

16. Rajni Bala. *Hindi Ram Kavya mein Bharat*. U Delhi.

17. Satvir Singh. *Sumitra Nandan Pant ke kavya mein yug bodh*. U Delhi.

18. Sharma, Nandkishore. *Hindi vam kavita ka saundarya shastra*. U Hyderabad.

19. Sharma, Prem Lata. *Rangeya Raghava ke upanyason mein samajik chetna*. U Delhi.

20. Sharma, Upender Lal. *Pramukh puranon ke sandarbh mein Sant Trai, Kabir, Guru Nanak aur Sunderdas ke sahitya ka alochnatmak adhyayan*. Pb U, Chandigarh.

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Urdu

1. Masood Siraj, S. *Society and culture in dakhni literature*. U Mysore.

2. Intizar Mirza. *A critical study of the contribution of Old Delhi college to urdu language and literature*. U Delhi.

3. Mohammed Abdur Rasheed. *Urdu bahaisiyat zarya-e-taleem*. U Hyderabad.

4. Mohammad Shoukath Hayath. *The critics of Mir Taqi Mir*. SVU, Tirupati.

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Assamese

1. Barman, Narayan Chandra. *Manasa cult and literature in Assam*. Gauhati U.

2. Dhar, Debaranjan. *Saratchandra and the assamese novel, first-half of twentieth century: Socio-economic analysis*. NBU, Rajarammohunpur.

Maithili

1. Jha, Balkrishna. *A descriptive study of maithili language of Nepal spoken in Saptari District*. U Poona.

Oriya

1. Mohanty, Narayan. *Dandi Ramayana: Eka adhyayana*. Berhampur U.

2. Mohanty, Trupti Prava. *Odia jibani sahitya*. Utkal U, Bhubaneswar.

3. Nayak, Raghabananda. *Sarala Mahavaratare dharmika parampara*. Utkal U, Bhubaneswar.

Marathi

1. Gaikwad, Mirdeo Jibaja. *Aitihasik marathi kadambriteel Shivaji ani Shivkalche chitran*, 1879 *to* 1972. U Poona.

Tamil

1. Deivanayagam, M. *A comparative study of the Bible Tirukkural and the Fourteen Saivasiddantha Sastras*. U Madras.

2. Parthasarathy, J. *A study of the language of advertisements in Tamil*. U Madras.

3. Sunandha Devi, S. *A criticism of Tamilvanan's detective novels*. U Madras.

Malayalam

1. Mohana Bhas, V.S. *A semantic analysis of Malayalam verbs*. U Madras.

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1. Leelavathy, C.B. *Narrative poems in modern kannada literature* . U Mysore.

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Telugu

1. Babavali Rao, Chennamsetty. *Life and works of Dr. Tripura Venkatesurya Prasada Rao.* U Madras.
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Geography

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History

1. Bajpai, Madhulika. *Madhya Pradesh mein Jain dharma ka vikas: Prarambh se* 1200 *isvi tak.* RDV, Jabalpur.
2. Bhatia, Shyamala. *Social change and politics in the Punjab,* 1898-1910. U Delhi.
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11. Mishra, Suresh Chandra. *An inscriptional approach to the study of the Arthasastra of Kautilya.* U Delhi.
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16. Rana, R.P. *Social and economic background of the rise of Bharatpur Kingdom.* JNU, Delhi.
17. Sharma, Desh Bhushan. *History of the Sikh light infantry, from* 1914 *to* 1945. Meerut U.
18. Shinde, Vasant Shivram. *Early settlements in the Central Tapi Basin.* U Poona.
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(iii) Five year's teaching/research experience in the field of study.

Desirable

(i) Capacity to guide research.
(ii) Knowledge of local crops and field conditions.

Qualification : Essential

B. Assistant Professor

(i) Consistently good academic record with first or high 2nd class Master's Degree in the relevant subject or an equivalent degree of foreign University.

Desirable

(i) Two years teaching/research experience in the field of study.

(ii) A Doctor's degree or published research work of an equally standard; and

(iii) Knowledge of local crops and field conditions.

Qualification : Essential

C. Farm Superintendent

(i) First Class Bachelor's Degree in Agriculture or Horticulture.

(ii) Five years experience in Farm or Orchard Management.

Desirable

(i) Knowledge of local crops and field conditions.

(ii) Knowledge of local language.

Items of Bio-data to be furnished : (1) Full name, (2) Permanent address, (3) Present/Postal address, (4) Father's name, (5) Father's permanent address, (6) Nationality, (7) Religion, (8) Date of birth & place of birth, (9) Marital status, (10) Whether belongs to Scheduled Caste/Scheduled Tribe (Certificate to be submitted if belongs to any of the said category), (11) Academic qualifications beginning from Matric/equivalent standard in the following manner:

Sl. No., Examination Passed & Year of Passing, Name of Institution/School/College/Univ. where studied, Division/Class obtained, Percentage of marks secured, Subjects taken, Distinction, if any, Remarks.

(12) Experience, (13) Research works as evidenced by published papers (copy to be enclosed), (14) Name & address of atleast 2(two) referees (not related to the candidate); and (15) Any other information which the candidate wants to furnish but not covered by the above items.

All the posts are temporary but likely to continue indefinitely. 31% and 2% of the vacancies are reserved for SC/ST candidates respectively subject to their fulfilling the qualifications and standard prescribed above.

Applications complete in all respects mentioning the post applied for, along with attested copies of the certificates, mark-sheets, testimonials, publications (if any) etc. must reach the office of the undersigned on or before **15-5-85** during office hours. Those who applied already in response to this office advertisement of even No. dated **30-8-84** need not apply again. Persons already in service should apply through proper channel. The candidates may be required to appear for interview at their own cost at Imphal as and when called for.

S. Bapu Singh
PRINCIPAL &
MEMBER-SECRETARY

INDIAN INSTITUTE OF TECHNOLOGY
KHARAGPUR

Advertisement No. R/3/85

Applications are invited for the undermentioned posts at the Indian Institute of Technology, Kharagpur, West Bengal.

1. **Registrar :** 1 Post.

Scale of Pay : Rs.1500-60-1800-100-2000-125/2-2500 plus D.A. as admissible.

Age : Preferably between 40 and 45 years.

Accommodation : Licence-fee free unfurnished quarters will be provided in the Campus.

A. Qualifications

1. A good Bachelor's degree in Arts, Science, Commerce, Engineering or Technology of a recognised University.

2. A post-graduate degree or diploma in any of the above fields or in Public Administration/Management of a recognised Institute/University or its equivalent or recognised qualifications as Chartered/Cost/SAS Accountant.

B. Experience

A minimum of 15 years of administrative experience, preferably in a Government, Educational or Research Institute or in a commercial organisation of national standing. Out of this, atleast 8 years should be in a responsible position. The candidates would be expected to have an adequate grasp of financial matters, secretarial experience of statutory bodies and committees, and some familiarity with academic activities and working procedures in higher educational institutions.

C. Desirable

1. Teaching and research experience or experience of life on a residential educational campus.

2. Experience of computer systems for information processing and retrieval.

D. In the case of candidates with exceptional qualifications, the duration of experience may be relaxed suitably.

II. **Deputy Registrar** (For Sponsored Research & Industrial Consultancy Centre) : 1 post.

Scale of Pay : Rs. 1200-50-1600-60-1900/- plus D.A. as admissible.

Age : Preferably between 35 and 45 years.

A. Qualifications

1. A good Bachelor's Degree in Arts, Science, Commerce, Engineering or Technology of a recognised University.

2. A post-graduate Degree or Diploma in any of the above fields or in Public Administration/Management of a recognised Institute/University or its equivalent; or recognised qualifications as Chartered/Cost/SAS Accountant.

B. Experience

A minimum of 10 years of relevant administrative experience preferably in a Government, Educational or Research Institute or in a commercial organisation of a national standing. Out of this, atleast 5 years should be in a responsible position. The candidate would be expected to have some familiarity with academic activities and working procedures in higher educational institutions.

C. Desirable

1. Teaching and Research experience or experience of life on a residential educational campus.

2. Experience of computer systems for information processing and retrieval.

D. In the case of candidates with exceptional qualifications, the duration of experience may be relaxed suitably.

III. **Engineer :** (Micro-electronics Centre—Electronics & Electrical Communication Engineering Department): 1 post.

(Post is temporary but likely to continue—The post is reserved for Scheduled Caste candidates but general candidates may also apply. The general candidates will, however, be considered if no suitable Scheduled Caste candidate is available for appointment to the post).

Scale of Pay : Rs. 700-40-900-EB-40-1100-50-1300/- plus D.A. as admissible.

Age : Preferably between 28 and 38 years.

Qualifications & Experience
Essential

A good Bachelor's degree in the appropriate branch of Engineering or equivalent.

Fields of Specialisations

Electronics/Electrical Engineering with Electronics Specialisation.

Job Requirements

Installation, maintenance and operation of a modern Integrated Circuits Laboratory. Candidates having working experience in this area will be given preference.

IV. **Manager-in-Charge** (Institute Guest Houses) : 1 post

Scale of Pay : Rs. 700-40-900-EB-40-1100-50-1300/- plus D.A. as admissible.

Age : Ordinarily not below 30 years.

Qualifications & Experience

1. Graduate in any discipline.

2. Diploma in Catering Technology from a recognised Institute with 5 years experience in a reputed catering establishment or Institution, 2 years of which should be in a supervisory capacity.

V. **Assistant Librarian :** 1 Post.

Scale of Pay : Rs. 700-40-1100-50-1600/- plus D.A. as admissible.

Age : Below 35 years.

Qualifications : Essential

1. Good academic record with at least a high second class Master's Degree in a subject other than Library Science.

2. Master's degree in Library Science with first or high second class.

Desirable

1. Ability to help readers.
2. Knowledge of Proof Reading.
3. Experience of having worked in a large reputed Library.

VI. **Assistant Engineer** (Press): 1 Post.

Scale of Pay: Rs. 650-30-740-35-810-EB-35-880-40-1000-EB-40-1200/- plus D.A. as admissible.

Age : Not below 25 years.

Qualifications & Experience
Essential

(i) Degree in Printing Technology from an Institute of repute with a minimum of 3 years' experience or a diploma in Printing Technology—with a minimum of 8 years' experience in a reputable Printing Press of which at least two years should be in a supervisory capacity.

(ii) Detailed knowledge of both Letter Press and Offset printing processes.

Desirable

1. Experience in having worked with Russian and English monotype machines.

2. Practical knowledge of repairing and maintenance of printing machinery.

Job requirements

1. To supervise and maintain the Institute Press.
2. To handle staff of the Institute Press.
3. To maintain Stores.
4. Any other work as may be assigned to him.

The qualifications regarding experience is relaxable at the discretion of the competent authority in the case of candidates belonging to the Scheduled Castes if at any stage of selection the competent authority is of the opinion that sufficient number of candidates from this community possessing the requisite experience is not likely to be available to fill up the vacancy reserved for them.

The qualifications and experience prescribed above are the minimum and mere possession of the same does not entitle any candidate to be called for interview. Where the number of applications received in response to the advertisement is large, it will not be convenient nor possible for the Institute to interview all those candidates; in that case the Institute may restrict the number of candidates for interview etc. to a reasonable limit on the basis of qualifications and experience higher than the minimum prescribed in the advertisement.

Application forms may be had from the Registrar on request along with an unstamped self-addressed envelope of size 23 cm × 10 cm. Applications accompanied with an application fee (non-refundable) of Rs. 7.50 (Rs. 1.87 for SC/ST candidates) payable by means of Crossed Indian Postal Order to the Indian Institute of Technology, Kharagpur at Kharagpur-721302 Post Office should reach the Registrar, Indian Institute of Technology, Kharagpur, Pin-721302 by the **18 May, 1985.**

Applicants who are in the employment of Government/Semi-Government Organisation/Educational Institute or of any Government undertaking should send their applications through proper channel.

S. R. Acharyya
REGISTRAR (Offg.)

UNIVERSITY OF NORTH BENGAL

F.22 Advt. Estt. 12/R-85

Dated 24-4-85

Applications in prescribed forms are invited for the following posts:

(A) **Professor** : One each in English (Specialisation : English Language teaching), History (Specialisation : Archaeology), Mathematics (Specialisation in General Topology/Functional Analysis/Algebra) & at the Centre for Himalayan Studies (Specialisation : Sociology/Social Anthropology).

(B) **Reader** : One each in Economics (Specialisation : Demography & Population Planning), Philosophy (Specialisation : Philosophy of Art, Moral Philosophy/Comparative Religion), History (Open), Computer Science, at the Centre for Himalayan Studies (Specialisation : Human Geography) and English (open).

(C) **Lecturer in Mathematics** : Post one. Specialisation—Applied Mathematics with Elasticity (Preferably).

(D) **Lecturer in Law** at the University College of Law.

Scale of Pay: (A) Professor: Rs. 1500-2500/-, (B) Reader : Rs. 1200-1900/- and (C) Lecturer : Rs. 700-1600/- respectively with other allowances and benefits as per University rules and (D) Lecturer in Law : Rs. 700-1600/- with other allowances and benefits as per rules.

Qualifications : For Professors, Readers and Lecturers as prescribed by the University Grants Commission. Details of qualifications for Professors, Readers and Lecturers as also for the posts of Lecturers in Law may be obtained with application forms.

Essential Qualification for Reader Computer Science : (i) M. Tech in Computer Science/Radiophysics and Electronics/Applied Physics or an equivalent Degree, or M.Sc. in Physics/Mathematics or in a relevant/related subject or an equivalent degree of a foreign University with consistently good academic records. (ii) Adequate experience in developing systems software (iii) Knowledge of Fortran, Assembly language, PASCAL/ALGOL and COBOL/BASIC, (iv) for the post of Reader, ability to guide research workers and to carry out research workers and to carry out research and development projects.

All the posts are reserved for the candidates belonging to S.C./S.T. provided they fulfil the essential qualifications laid down. If S.C./S.T. candidates are not available or not found suitable, posts will be filled up from general categories. Hence non-S.C./S.T. candidates may also apply.

Choice of selection committee may not necessarily be confined to those who apply formally. No application except in prescribed application forms may be considered.

The candidates who applied earlier for the post of Professor/Reader at the Centre for Himalayan Studies, Reader/Professor in History, Professor in Mathematics, Reader in Economics, Reader in English and Reader in Computer Science need not apply again.

Prescribed application forms may be obtained from the office of the Registrar personally on payment of Rs. 5/- (Rs. 3/- for S.C./S.T.) in cash at the University Cash Counter or by sending a self addressed envelope of 25×13 cms. affixed with stamps worth Rs. 1.40 accompanied by crossed I.P.O./Bank Draft of Rs. 5/- (Rs. 3/- for S.C./S.T.) in favour of the University of North Bengal. Filled in application forms (6 copies) along with the one self addressed unstamped envelope must reach the office of the Registrar, P.O. North Bengal University, Dist. Darjeeling, Pin : 734430 on or before 31-5-1985.

REGISTRAR

MARATHWADA UNIVERSITY

Advertisement No. Estt Dept. 3/1985

Applications are invited for the following posts in the University Departments so as to reach the undersigned on or before **May 27, 1985**. Figures in the brackets indicate the number of posts in each subject. Reservation of posts for SCs, STs and NT/DNT is as indicated in the brackets of the subject concerned.

Professors : Rs. 1500-2500
Zoology (1), (SC)
Statistics (1), (NT/DNT)
English (1), Economics (2), (ST 1)
Botany (Env. Sc.) (1),
Zoology (Env. Sc.) (1), Bio-Technology (Nanded Centre) (1), Industrial Chemistry (Nanded Centre) (1)
Social Work (Nanded Centre) (1) (SC)

Readers : Rs. 1200-1900
English (2), Commerce (1), (NT/DNT)
Sociology (1),
Library Science (1), (ST)
History (1), Chemistry (1),
Bio-Chemistry (1), Botany (Env. Sc.) (1),
Zoology (Env. Sc.) (1), (SC)
Bio-Technology (Nanded Centre) (1), (ST)
Social Work Nanded Centre (1),
Chemistry (Nanded Centre) (1), (SC)

Lecturers : Rs. 700-1600
Chemistry (1), (NT/DNT)
Physics (2), (SC 1)
Statistics (1), (ST)
Sociology (2), (SC 1)
Mathematics (1), (ST 1)
Public Administration (1) (ST)
Commerce (1), Marathi (1),
Hindi (1), (SC)
Journalism (1), Bio-Technology (Nanded Centre) (2), Chemical Engineering (Nanded Centre) (1), Chemical Engineering Technology (Nanded Centre) (1), Social Work (Nanded Centre) (2), Russian (1) (NT/DNT)

N.B.

(i) If a suitable candidate belonging to a particular reserved category for which the post is reserved is not available, the post will be filled up from a suitable candidate belonging to another reserved category, if available.

(ii) Selected candidates will be required to join within the time limit specified in the order of appointment.

Candidates applying for the post of Professor and Reader should ordinarily be below the age of 45 years and those applying for the post of Lecturer should ordinarily be below the age of 35 years, relaxable by five years in the case of candidates belonging to backward classes. The age limit can be relaxed in the case of deserving and in service candidates also.

Eight copies of applications together with eight copies each of the testimonials, if any, separately for each post giving particulars in the prescribed form (which will be supplied on receipt of an Indian Postal Order of Rs. 5/- towards the cost of form) should be sent to the Registrar so as to reach him not later than **May 27, 1985**. Testimonials should be attested by a Principal of College or Member of the Senate of the Marathwada University or by a Gazetted Officer. The prescribed application forms alongwith detailed advertisement containing full particulars of the posts will be supplied to the candidates on request accompanied by a self-addressed envelop (23 x 10cms.) bearing postal stamps worth Rs. 3/- for the postage separately for each post.

. Candidates who are employed at present must submit their applications through their Employers.

. Canvassing, direct or indirect, will be disqualification.

R.M. Patodekar
REGISTRAR

BANASTHALI VIDYAPITH

P.O. BANASTHALI VIDYAPITH
(RAJASTHAN)

"Reference advertisement 1/85 published in April 16, 1985 issue of University News the following is added. Dept. of History : Reader-1.

Last date of receiving applications 31st May 1985 instead 15th May 1985. Postal Order cost Rs. 10/- instead Rs. 20/-".

SECRETARY

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University News

MAY 16, 1985 Rs. 1.00

- Financial Resources : Dimensions and Dilemmas
- JNU Workshop on Urban Planning
- Magadh Varsity Orientation Programme in Adult Education
- Training in Computers at PAU

CLASSIFIED ADVERTISEMENT

KAKATIYA UNIVERSITY

VIDYARANYAPURI, WARANGAL-506009

No. 692/A2/1985

Dated : 6-5-1985

ADVERTISEMENT NO. 2/85

Applications are invited in the prescribed form for the following posts in the Kakatiya University service so as to reach the undersigned on or before **6-7-1985 (6th July 1985).**

Department	Post	Area of Specialisation
ZOOLOGY	(i) Reader	Environmental Biology
	(ii) Lecturer	Cytogenetics
BOTANY	(i) Reader	Tissue Culture
	(ii) Lecturer (reserved for B.C.)	Microbiology/Plant Pathology
PHYSICS	(i) Lecturers (THREE)	(a) Experimental Nuclear Physics (b) Theoretical Physics (c) Any Branch of Physics
MATHEMATICS	(i) Reader	Applied Algebra (Group Theory)
CHEMISTRY	(i) Reader (Reserved for S.C.)	Physical Chemistry
	(ii) Lecturer	Inorganic Chemistry
COMMERCE	(i) Reader	Cost & Management Accounting
PUBLIC ADMN.	(i) Reader	—
	(ii) Lecturer	—
POLITICAL SC.	(i) Lecturer	—
ECONOMICS	(i) Reader	Economic Theory
	(ii) Reader	—
	(iii) Lecturer	Mathematical Economics/ Econometrics
	(iv) Lecturer	—
EDUCATION	(i) Reader	Educational Methodology/ Technology
ENGLISH	(i) Lecturers (TWO)	—
TELUGU	(i) Lecturer	Language and Society
HINDI	(i) Lecturer	—
PHARMACY	(i) Lecturer (reserved for S.C.)	Pharmacology/Pharmacognosy
	(ii) Technical Assistant	Instrumentation/Microbiological work/Paramedical work/Pharmacology/Electronics
UNIVERSITY SERVICE INSTRUMENTATION CENTRE	(i) Technician	Electron Microscope
	(ii) Technician	Isotopes
	(iii) Technician	Electronics

Candidates, who have already applied in the prescribed form in response to this office Notification No. 1/85 (No. 10/A2/1985 dated 1-2-1985) need not apply again, but they are required to intimate this office, the additional qualifications acquired, along with change in address, if any.

If Scheduled Caste candidate is not available for the post of Lecturer in Pharmacy, candidates applying under other categories will be considered on temporary basis.

Reservation of 15%, 7.5% and 25% of vacancies of Lecturers and Readers is made for candidates belonging to Scheduled Castes, Scheduled Tribes and listed Backward Classes respectively as per G.O. Ms. No. 995, dated 16-12-1982.

Prescribed application formscan be obtained from the Publication Cell, Registrar's Office, Kakatiya University, Vidyaranyapuri, Warangal 506009 in person or by post, sending a self addressed envelope, affixing Rs. 1.50 paise postage stamps on payment of Rs. 10 either by a challan payable at the State Bank of Hyderabad, Kakatiya University Branch or by sending a crossed Demand Draft in favour of the Registrar, Kakatiya University, Warangal. Postal Orders will not be accepted. The University reserves the right to fill or not to fill all or any of the posts.

Details of qualifications, specific specialisations and experience prescribed in respect of the above posts (including the particulars and precise branch of specialisation which is needed and also the preferential qualifications considered desirable) will be furnished alongwith the application form.

Dr. A. Narsing Rao
REGISTRAR

ASSOCIATION OF INDIAN UNIVERSITIES

16 Kotla Marg, New Delhi 110002

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30 MAY 1985
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Opinions expressed in the articles and reviews are individuals and do not necessarily reflect the policies of the Association

Editor :
M. S. RAMAMURTHY

Saudi Arabian Educational Delegation Meets UGC Chairman

A four-member educational delegation led by Dr. Mansoor I Al Turki, President, King Saud University, Riyadh met the U.G.C. Chairman, Dr. (Mrs.) Madhuri R. Shah, and discussed with her the possibility of co-operation between institutions in India and Saudi Arabia in the fields of higher education and scientific research particularly the development of discipline-based linkages.

The delegation is on a week's visit to India at the invitation of the University Grants Commission. During their stay in India, the delegation will call on the Education Minister and Minister of State for External Affairs. It will also have discussions with the Ministry of Education, Department of Science & Technology, ICAR and CSIR and will visit JNU and All India Institute of Medical Sciences in New Delhi and Bombay University, Tata Institute of Fundamental Research and S.N.D.T. Women's University, Bombay.

Other members of the delegation are: Dr. Faleh Al Faleh, Dean of Medical College, Dr. Allaalah Abu Hasan, Dean of Agricultural College and Mr. Ibrahim Hakeem, Secretary to Dr. Turki. □

Youth Programmes

In a written answer, the Minister of State for Youth Affairs and Sports, Shri R.K. Jaichandra Singh informed the Parliament that Rs. 50 lakhs has been earmarked exclusively for observance of the International Year of the Youth. This comes out of a total allocation of more than Rs. 18 crores in the current financial year for the expansion and intensification of ongoing youth programmes and starting of new schemes. □

Financial Resources : Dimensions and Dilemmas

S. N. Saraf*

There is a logical rationale for initiating discussion on the proposed National Education Policy by making pointed and meaningful reference, right in the beginning, to resource constraints which will have an impact on our vision of the future of education and education for future. Inspite of high hopes, which may be aroused, stark facts need to be stated clearly and not pushed under the rug. That will lend reality to our policy making and plan formulation.

Undoubtedly, the expenditure on education has been increasing rapidly since 1950-51; growing from Rs. 144 crores in 1950-51 to Rs. 5186 crores (budget) in 1982-83 and over Rs. 6500 crores in 1984-85. In terms of proportion of the national income, it has increased from 1.2% to 3.7% during the same period. While the average annual rate at which expenditure has increased, atleast during the last decade, it would roughly be 18.5% but the growth of actual expenditure is now ranging between 8-9 percent. The total Government expenditure on education (Education and other Departments combined) to total expenditure has been almost steady ranging between 14 to 16 per cent. In 1982-83 on Revenue account the Centre provided 2.8 percent and all the States together 24.3 percent and the total was about 14 percent. In 1982-83, of Rs. 5186 crores, Rs. 4373 crores was for non-plan and Rs. 813 crores for plan programmes.

In fact, a somewhat downward trend in the proportion of expenditure on education to total expenditure is discerned. Indications are that the trend is not going to change materially in the immediate future.

It is also observed that over the Six Plans, while the plan expenditure has increased in absolute terms, its proportion to total expenditure has decreased. The impression emerges that the final Plan figure for Education which emerge are based on availability of resources and the over-all priority accorded to various sectors in the States. The hard facts are that allocations for education in the States suffer a lot. For instance, in the Fourth Plan (1969-74), the Steering Group had recommended Rs. 1300 crores outlay for Education but the final allocation was Rs. 822 crores i.e. Rs. 478 crores less (36%)—the only sector which did not suffer major reduction was University Education. For the Fifth Plan (1974-79), the Steering Group proposed Rs. 2200 crores, but the final allocation was Rs. 1285 crores—i.e. Rs. 915 crores less (42%). This time Elementary Education suffered major reduction of Rs. 620 crores (60%)—the University Education had minimum reduction. In the Sixth Plan (1980-85), the Steering Group recommended Rs. 3500 crores but the final allocation was Rs. 2524 crores i.e. less by Rs. 976 crores (28%)—the major reduction of Rs. 795 crores and Rs. 102 crores was under Elementary (47%) and Adult Education (44%) sectors respectively. There was hardly any reduction under other sectors. The comparative figures are given in Annexure I. (See page 6) Without being a prophet of doom, such an eventuality may possibly occur even in the Seventh Plan.

In fact all plan documents have emphasised the role of education in promoting socio-economic development. But what actually happens is that, at the time of allocation of funds, the so-called productive sectors such as irrigation, power, industry etc. get high priority. It is assumed that these sectors lead to economic growth in the earlier phases of plan formulation. Education is assumed to be a long-term investment which can be deferred. for some time, to provide for short-gestation sectors. Further, because of waste within the education sector, which has been continuing in one form or the other, it is always argued that further investment will produce more waste. Thus it is found that the allocation for education, within the Plan, has decreased from 7.6% in the First Plan to 2.6 percent in the Sixth Plan. This trend has to be reversed not unilaterally though but with the proviso that additional outlay does not accentuate wastage.

The public sector outlay for the Seventh Plan has been put down as Rs. 18,00,000 crores. It is difficult to make any forecast about the likely outlay for education especially because of the uncertain resource position. By the end of July 1985, when Seventh Plan takes concrete shape, the final allocations may emerge, but keeping in view the

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**Visiting Consultant, National Institute of Educational Planning and Administration, 17-B Sri Aurobindo Marg, New Delhi-110016, formerly Education Adviser, Planning Commission, New Delhi.*

—Opinions expressed in this article are personal. The author would be grateful for the comments of readers on the Institute address given above.

past trends and the demand for resources from various competing sectors, the total allocation for education could be anybody's guess. In the Fifth and Sixth Plans, the percentage of outlay for Education to total plan outlay was 3.3 and 2.6 respectively. The percentages have seen downward trend though the allocations (total and education) have increased. With such financial constraints, the parameters of the proposed National Educational Policy will have to be clearly determined and at least during the Seventh Plan.*

Though in the final stage, when negotiations with the State Governments about financial resources will be complete, there are rare chances of getting higher percentage of allocation than in the Sixth Plan. Taking into account the magnitude of tasks, one would like to plead for atleast 4 per cent of total plan allocation for Education in the Seventh Plan compared to 2.6 percent in the Sixth Plan. These should be treated as the minimum base. Even this much rise, of which there are not enough indications—will involve further hard thinking about the allocation for Education proposed in the Seventh Plan. Since major investment for Education is through Plans, this minimum allocation of funds, in the Seventh Plan, may help in reversing the existing downward trend in the percentage allocation for Education. Through such regular interventions it may be possible to reach the National Education Policy, 1960 recommendation of 6 percent of G.N.P. as expenditure on Education by 2001.

To achieve several national tasks-equity, excellence, efficiency—Governmental resources will have to be supplemented by multi-sectoral efforts.

Educational financing in India initially developed as a multi-source, system; the Government is taking an increasingly commanding position in this respect since Independence. The non-Governmental sources consist of fees, endowments, donations and voluntary contributions. Their proportion to total expenditure is decreasing over the years from 43 percent in 1950-51 to 29 percent in 1965-66 and to about 20 percent in 1980-81. Fee accounted for 20.4 percent in 1950-51 and came down to 12.0 percent in 1980-81. 'Open door policy', combined with free or nearly free education has accentuated financial crisis. The National Policy on Education must reflect on this issue.

In principle, finding additional resources is laudable. However, there are many difficulties. For instance, take fees at the higher education stage. The fees in 1950-51 constituted 25 percent of the total expenditure in higher education. This proportion has now come down to around ten or so. Surprisingly enough, higher education expenditure has gone up by about twenty times. Three decades ago, the total expenditure on higher education was a mere Rs. 35 crores, it is now around Rs. 600 crores. Fees could have played some role in the financing of education but there is terrible resistance to this measure. All Five Year Plan documents have mentioned this as a source of financing of education but all the time it is found that, at the implementation level, there is resistance. For instance, the rate of fees in the University of Delhi, at present, is almost the same as it was in 1950 inspite of the high rise in living costs! No one dares suggest an increase in fees. No wonder, therefore, that the Sixth Five Year Plan did not make any recommendations regarding mobilisation of resources for education excepting in general terms when it referred to non-monetary inputs.

The Planning Commission did reiterate the need for mobilisation of additional resources from other sources such as charging development fees at the secondary stage for financing programmes relating to work experience teaching of science, school building, equipment, etc. It thought of recommending that fees need to be charged at rates which bear a reasonable relationship with the cost of providing education and felt that it was completely illogical that those affluent sections of society who pay very high fees for the school education of their children, should make the public exchequer pay for higher education.

Perhaps one of the alternatives would be to encourage non-formal education, which emphasis correspondence courses, distance learning on part-time or own-time basis, offering a variety of job-oriented curricula, with greater flexibility in respect of completion time, age of admission and multiple entry. This shift would reduce the load on the formal day-time education system, enable youths and adults to upgrade their knowledge at any time according to their situation and requirements and reduce the cost of subsidy to education. For instance, in India, evening and correspondence course have proved to be extremely popular and self-financing; their efficiency, however, required to be improved.

The extent to which we can increase expenditure on education without affecting other priorities will depend on many factors. The reality is that even if socio-political conditions are highly favourable for investment in education, it just cannot be done if the norms of expenditure continue to be based on the existing full-time, formal, sequential, dysfunctional system of education and especially when revenue resources are not increasing to the same extent as the present formal system of education. The cost and finance experts of the formal system of education will have to examine new paths and suggest alternatives to help in developing realistic models of educational financing and expenditure. It would be realistic not to ape the existing norms. Appropriate cost (not 'low cost') patterns will have to be evolved.

The preoccupation with 'cost-benefit analysis' studies which seem to be of some interest to a few

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**If by any chance, the percentage allocation for Education in the Seventh Plan to the total public sector outlay, comes down to 2 to 2,2, the outlay may be around Rs.* 3600 *crores or Rs.* 4000 *crores* ! *That will be almost tragic.*

persons in the academic world is unnecessary because the results cannot be fed back into policy formulation. Everyone knows that investment in primary education—or for that matter in adult literacy—is capable of giving higher and immediate returns, but those very scholars who publish these results, after analysing hard facts and data in University research departments, plead with eloquence and strong arguments that larger allocations should be provided for higher education. Elementary education and adult literacy have never been "time bombs".

The Central and State Governments in India finance educational development programmes in several ways : one major channel is through the Education Departments, the other is the formal sector being operated by Departments other than education. The third is through various educational, training, extension and non-formal sectors of various Development Departments. The last two channels are steadily developing. There should be considerable step-up in the last two sectors as well as including education components of various developmental projects. Developmental Sectors, other than Education, should make significant contribution in human resource development. The "splendid isolation" of the Education Departments alone to deliver all the educational goods through its own institutions and programmes has to end. The earlier, the better : the implications are obvious. While the Education Departments have been putting all their eggs in the formal education sector basket, a time has come to get weaned away from the idea that formal education alone is an answer to the huge problem of human resource development. There are other sectors of development having education and training components but not being recognised or encouraged. The proposed National Education Policy should highlight this and be addressed itself to all the Developmental Departments and Agencies and not only the Education Departments.

As it is, there are large number of such projects in our country which have education components. Over the past decades, outlays on non-formal and informal sectors of education by Departments other than Education have been increasing*. To give one instance, the National Directorate of Adult Education, found** that as many as 63 programmes of other Departments had educational components which could directly be utilised for literacy and adult education. This kind of identification has to be done in other areas of education and training components in Departments other than Education. The formal educationists (with capital F's and E's) have to be stirred out of their slumber to see the vast potential of this unexplored field of education, which is sometimes unutilised or underutilised, but relevant, down-to-earth, and often efficient in terms of use and economy. In many areas, these are practically the sole channels of education for the masses—but are languishing for want of academic and professional support. Efforts should now be concentrated on three major fronts. Firstly, such institutions should be given adequate status and official support so that they gain in prestige and come to be regarded as atleast equal to the modern forms of non-formal education. Secondly, it is desirable to give them full academic support. This implies that the academics (with capital A) should seriously start to study them and take an interest in developing them. Thirdly, it would be appropriate to develop them as powerful instruments of modernisation and development. This can be accomplished if their content is radically transformed by including modern science and an appropriate social philosophy of development. One could even claim that if such steps are taken, we may be moving towards modernisation of the entire social fabric instead of concentrating, as hitherto, on modernising the elites only. However, one important precaution is that there should be perfect collaboration in the programme implementation; otherwise the right hand will not know what the left hand is doing. This calls for areas-level planning and development. The National Education Policy must refer to this fertile area which needs to be utilised for resource support and for lending relevance to Education Programme.

It would have to be emphasised that various development departments should earmark atleast 10 percent of their total allocations for formal and non-formal education training programmes for the specific target group of population which come within their purview.

We have area-specific or problem-specific projects such as Hill Area Plans, Drought Prone Area Development Programmes, Small and Marginal Farmers Development Agencies, Integrated Tribal Development Plans, Resettlement Projects, Co-operative and Credit Programmes, Integrated Rural Development Project etc. The accent in those projects is on development of physical infrastructures and financial inputs largely related to economic development of the area or a specific target population. At present, education components do not figure in these projects : training is provided for but not in a big way. Thus the utilisation of the economic benefits is not optimal and self-reliance becomes a distant, not a distinct, goal. The Education Departments will have to take initiative to help the Development Departments in the preparation of integrated projects having education and training components. After the dreparation of these profiles, the Education Departments should provide all possible technical assistance. Adoption of this strategy will not only make education relevant, functional and linked with area and project development but will also release presssure on the meagre financial resources of the Education Department. An area which should get due recognition.

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* *The total Government expenditure in* 1979-80, *was Rs.* 3500 *crores and out of this Rs.* 674 *crores, about* 19 *percent, was the expenditure of Departments other than Education, on education and training. This expenditure in absolute terms has been increasing over the years and with the current disaffection and disenchantment with the formal sector of education, which is producing "unemployables", there is a positive trend and definite encouragement to expand the education and training sector of Departments, other than Education. In* 1982-83, *while the total Government expenditure was Rs.* 5185. *other Departments' share was Rs.* 870 *crores which represented about* 14 *percent.*

***Adult education components of the development schemes of the Government of India : a compendium, New Delhi, Directorate of Education, Ministry of Education and Social Welfare, Government of India, October* 1978.

A word about priorities within the sector of Education in terms of final allocation of funds. Within the sector of education unfortunately the prestigious projects get priority as they become symbols of status. This is reflected in Annexure II. (See page 6) In the first Plan, allocations for Elementary and Adult Education was 61% of the total plan outlay for Education and with great difficulty, it was restored to 41% in the Sixth Plan; it dipped as low as 31% in the Fourth Plan. Taking both the subsectors of University and Technical education together, the total expenditure incurred and outlay provided in the first Six Five Year Plans would be over Rs. 1914 crores or about 32 percent of the total expenditure/outlay on Education. This is exclusive of the provision for Medical and Agricultural Education shown in the respective sectors of development. It indicates the priority given to various sectors of Education in developmental plans. While some sectors may undoubtedly be important than others but it is rather difficult to disagree with the following observations made by late Prof. J.P. Naik in his book "The Education Commission and After", 1982 about Higher Education in the post-Independence period.

> "The Post-Independence period may be described literally as the "era of higher education" in Indian educational history....The University Education Commission was the first to be appointed by the Government of Free India; and throughout the past thirty years, higher education has received the highest priority, the best attention and proportionately large allocation of funds. It is also the one sector of education which has expanded most."

It is to be pondered by the emerging National Education Policy whether within the plan resources allecated, there should be a balanced distribution between various sub-sectors of education.

Some significant statements are also made that education should not be thought of only as a "sector of development—parallel, for example, to agriculture or industry—but as a pervasive element that must be integrated—horizontally and vertically—into all development efforts". This is laudable and written in almost all policy and plan documents; but the compartmentalisation of developmental sectors continues, even at the village level. What are the solutions? What is tragic is that, within the Education Department, the various sectors are generally unaware of one another's programmes; for instance, higher education bosses are too high to stoop, too low to have a look at what is happening at the base! Are deconcentration decentralisation, debureaucratisation, the answers ? If so, how can it be done in isolation only for the education sector? The proposed National Education Policy should contain positive directions in this regard.

Such a comprehensive review would serve the purpose if it is realised that financial resources is going to be the real constraint, even though some marginal openings may become available. It is in this background that sectoral policies need to be reflected and suitably re-designed.

RAYAT SHIKSHAN SANSTHA

SATARA (MAHARASHTRA)

Applications are invited for the post of a 'PRINCIPAL' for our Sanstha's College run on non-aided basis.

Scales and qualifications will be as prescribed by the University.

Preference will be given to Backward Class candidates.

Applications should reach the undersigned on or before **15th June, 1985.**

For the form of applications, please apply by sending a self addressed envelope of 25 cms. × 10 cms. size and a crossed postal order of Rs. 10/- drawn in favour of Secretary, Rayat Shikshan Sanstha, Satara.

Prin. S.D. Patil
SECRETARY

ANNEXURE-I

Steering Group on Education Recommendations and Final Allocations

Fourth, Fifth and Sixth Plans

(Rs. in crores)

S. No.	Sector	Fourth Plan			Fifth Plan			Sixth Plan		
		Steering Group	Final Allocation	Difference	Steering Group	Final Allocation	Difference	Steering Group	Final Allocation	Difference
1	2	3	4	5	6	7	8	9	10	11
1.	Elementary Education	330	235	—95 (28%)	1030	410	—620 (60%)	1700	905	—795 (47%)
2.	Secondary Education	334+	139+	—195 (58%)	350	250	—100 (29%)	450	420	—30 (7%)
3.	University Education	255	184	—71 (28%)	370	292	—78 (21%)	500	486	—14 (3%)
4.	Adult-Education	40	8	—32 (80%)	50	18	—32 (64%)	230	128	—102 (44%)
5.	Technical Education	213	125	—88 (41%)	190	156	—34 (18%)	300	278	—22 (7%)
6.	Cultural Programmes	20	12	—8 (40%)	25	37	+12 (48%)	100	84	—16 (16%)
7.	Other Programmes	108	119	+11 (10%)	185	122	—63 (34%)	220	223	+3 (2%)
	Total	1300	822	—478 (36%)	2200	1285	—915 (42%)	3500	2524	—976 (28%)

(Figures in parentheses indicate the percentage difference between the Steering Group proposals and Final Allocations)
+Steering Group had suggested Rs. 120 crores for Teacher Education including Science but the final allocation was only Rs. 20 crores.

ANNEXURE-II

Sector-wise Outlay/Expenditure in the Five Year Plans—Education and Total Plan

S. No.	Sector	First Plan 1951-56 Expenditure	Second Plan 1956-61 Expenditure	Third Plan 1961-66 Expenditure	Plan Inter-regnum 1966-69	Fourth Plan 1969-74 Expenditure	Fifth Plan 1974-79 Outlay	Sixth Plan 1980-85 Outlay
		(Rs. in Crores)						
1	2	3	4	5	6	7	8	9
1.	Elementary Education	85 (56)	95 (35)	201 (34)	75 (23)	239 (30)	410 (32)	905 (36)
2.	Secondary Education	20 (13)	51 (19)	103 (18)	52 (16)	140 (18)	250 (19)	420 (17)
3.	University Education	14 (9)	48 (18)	87 (15)	77 (24)	195 (25)	292 (23)	486 (19)
4.	Adult Education	5 (3)	4 (1)	2 (Neg.)	3 (1)	4.5 (1)	18 (1.4)	128 (5)
5.	Other Programme	9 (6)	23 (8)	64 (11)	30 (10)	89.5 (11)	122 (9.5)	223 (9)
6.	Total General Education	133 (87)	221 (81)	457 (78)	237 (74)	668 (85)	1092 (85)	2162 (86)
7.	Art & Culture	—	3 (1)	7 (1)	4 (1)	12 (2)	37 (2.9)	84 (3)
8.	Technical Education	20 (13)	49 (18)	125 (21)	81 (25)	106 (13)	156 (12.1)	278 (11)
9.	TOTAL EDN.	153 (100)	273 (100)	589 (100)	322 (100)	786 (100)	1285 (100)	2524 (100)
10.	TOTAL PLAN	1946	4680	8572		15,724	39,322	97,500
11.	EDN. as % of Total Plan	7.6	5.8	6.8		5.0	3.2	2.6

(Figures within parentheses indicate percentages)

National Workshop on Urban Planning at JNU

The National Workshop in Research Methods in Regional and Urban Planning was organised by Jawaharlal Nehru University from 25th March 1985 to 13 April, 1985. The workshop which was the first of its kind in the country was sponsored by the University Grants Commission and organised by the Centre for the Study of Regional Development at JNU. It was attended by 18 participants from all over India. The workshop was directed by Prof. Aijazuddin Ahmed, Ex-Chairman, Centre for the Study of Regional Development in the School of Social Sciences.

The Workshop was organised to expose young geography teachers and researchers in Indian universities and colleges to new developments in content and research methodology with special reference to quantitative techniques in areas of regional and urban planning. The 20-day workshop was organised to provide them with an opportunity to have interaction with senior faculty in geography and other allied disciplines, to exchange ideas and to share their experiences. It also trained them to undertake independent research in their respective areas of specialisation. Viewed in the context of national priorities for regional and unban development, the workshop fulfilled an important objective.

Besides the geographers, scholars from allied disciplines, such as economics, sociology, statistics and computer science were also invited to act as resource persons at the workshop. These disciplines have an important bearing on geographical research in regional and urban planning.

The major themes for discussion at this inter-disciplinary workshop included conceptual issues in planning and development in relation to spatial differentiation and regionalisation. Disparities in the levels of regional development and spatial differentiation in India in the historical context : comprehensive area planning and development and identification of backward and tribal regions and planning for drought-prone areas and tribal areas development.

Planning and development problems in the agricultural sector at the macro-level, issues in transport planning and development, planning and development for rural settlements with special reference to rural markets were also discussed. Planning and development problems of emerging Indian Metropolis and Planning and Development problems in the agricultural sector were also taken up.

Tutorial work at the workshop consisted of exercises in advanced quantitative methods, preparation of questionnaires for field survey, research hypotheses and inventory of source material.

Each participant formulated a research proposal in the area of his/her specialisation. The core faculty of the workshop which was locally based assisted the participants in the formulation of these proposals. The proposals were submitted in seminar discussions during the workshop.

At the conclusion of the workshop, the Vice-Chancellor, Prof. P.N. Srivastava awarded certificates to the participants. In the valedictory session, Prof. Srivastava highlighted the need for research in order to resolve the chronic problems of regional imbalances and urban development. He said that systematic research in these areas will be the first necessary step towards the discovery of viable solutions for such problems.

Adult education orientation programme organised at Magadh Varsity

The Centre for National Adult Education & Extension Programme, Magadh University, Bodh Gaya organised a four-day Orientation Programme in Adult Education for Principals and Teachers-in-charge on the campus from April 21 to 24, 1985. Thirty participants representing twenty colleges attended the programme.

Inaugurating the orientation programme, Sri F. Ahmed, Vice-Chancellor of Magadh University said that for all-round development of the country adult education had to play an important role. Bihar, he said, was one of the nine educationally backward states in the country and all-out efforts should be made to improve the situation.

Dr. B.K. Lal, Professor and Head, Deptt. of Philosophy, Magadh University in his presidential remarks said that provision of opportunities for adults to continue learning would not only be desirable but also essential in the present age. For the successful functioning of democracy, he said, eradication of illiteracy should receive priority.

Shri S.N. Singh, Deputy Director, Adult Education, Govt. of Bihar, who was the chief guest, mentioned the problems faced while implementing the programme. He suggested some of the strategies to be adopted during actual implemetation. He acknowledged frankly and forthrightly that although UNESCO had given the Literacy Award to the Govt. of Bihar for outstanding work done, not a little still remained to be accomplished. He suggested that in this programme the State Government, Universities and Colleges, and voluntary organisations should contribute their mite for elimination of illiteracy from the entire state.

In the post-lunch session Sri Sidrat Ansari, Director, All India Talim Ghar, New Delhi demonstrated the new technique developed by the Talim Ghar to teach illiterate adults. He claimed that through this technique learners would be made literate within ninety-six hours spread over three months. Sri Vishnudeo Sharma, District Adult Education Officer, Gaya read his paper on the concept of Adult Education.

During the other three days of the programme, papers were read on various aspects by speakers which were followed by discussions. Some of the aspects considered were: (1) Universities/colleges and continuing education; (2) role of universities and colleges in the eradication of illiteracy; (3) organisation of adult education centres and maintenance of accounts; (4) community involvement in adult education programmes; (5) UGC guidelines. One session was devoted to discussing the problems faced by programme officers in implementing the programme.

Workshop on 'research methodology in economics' at Bombay Varsity

An interesting and absorbing workshop on 'research methodology' was conducted by the Board of Studies in Economics, Bombay University, on April 14, 1985, at the Ruia College of Arts and Science, Bombay. The occasion was the introduction of a new paper on 'research methodology' in Economics at third-year B.A. (as an optional) for students in economics who constitute the largest number in the Social Sciences Faculty at the under-graduate level.

Professor P.R. Brahmananda, Director, Department of Economics, University of Bombay, gave the keynote as well as the valedictory address. He dealt with the development of the philosophy of Research Methodology in Economics, from David Hume onwards, in his keynote address. He pointed out that during the mid-fifties there was a revolution in favour of the modern econometric-based empirical method in which emphasis turned to testing of the the falsifiability of hypotheses. He also pointed out that the revolution underplayed the importance of the testing of assumptions. He referred to the F-twist associated with Milton Friedman in which it was maintained that the greater the unrealism of the assumptions, the more empirically plausible the results. He said that this twist however could never be tested because it would involve the exercise of testing the assumption which the empirical revolution rejected. In his valedictory address, Dr. Brahmananda gave an account of the experience of economists in the matter of predictions. In conclusion, he pointed out that it requires many talents and a great deal of luck, to make an economist.

More than 100 teachers in Economics from colleges, affiliated to the University in Greater Bombay, Thane, Raigad, Ratnagiri and Sindhudurg districts, and the Union Territory of Goa, actively participated in the deliberations and appreciated the efforts made by the University of Bombay to keep pace with the knowledge explosion. More than 10 papers were circulated as reading material among the participants.

Madras University will adopt open university system

It is reported that with effect from 1985-86, Madras University will start implementing the Open University system. The Vice-Chancellor of the University. Dr. B.B. Sundaresan, is reported to have said that B.A. (in history, economics, Tamil and

Agmark Essay Competition

It is notified for General public that the last date for receipt of Essay on the following topics has been extended upto the 15th of June, 1985. The essays in Hindi or English should not be more than 1000 words, typed in 1½ space and submitted in **triplicate** to the Agricultural Marketing Adviser to the Government of India, Ministry of Agriculture & Rural Development, Directorate of Marketing & Inspection, Head Office, C.G.O. Building, N.H.IV, FARIDABAD-121001 (Haryana) in double cover. The envelopes be superscribed as 'Essay Competition'.

1. Role of Agmark Products in our daily life (Open to all individuals)
2. Agmark as an aid to Internal & Export Trade (Open to all including Trade Associations)

First three winners of the Essay Competition each in Hindi and English will be awarded cash prizes of Rs. 5,000/-, Rs. 3,000/- and Rs. 2,000/- respectively. In addition there will be a certificate to each winner and winner shall be paid first class railway return fare by the shortest route to receive the award in Delhi. The competition is open to all the Indian Nationals barring employees of the Directorate of Marketing & Inspection and their relatives. The other information rules as published earlier in important newspapers during the last week of February, 1985 remained un-changed.

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English), B.Sc. in mathematics and B.Com. would be offered under this scheme. The eligibility conditions for admission to these courses would be that candidates must have completed 21 years of age as on June 1, 1985. No preliminary academic qualification is likely to be insisted upon.

An expert committee is to be set up soon to monitor the Open University Scheme.

Further, the Institute of Correspondence Education of the University will be starting B.A. (Music) course. The Department of Music will provide the practical experience needed through contact classes.

A certificate course in library science will also be offered by the Institute of Correspondence Education.

New courses at IARI

The Indian Agricultural Research Institute has introduced two new courses at M.Sc. level in "Molecular Biology" and in "Computer Application in Agriculture", from the academic session 1985-86, commencing in September, 1985.

JNU committee for remedial courses for SC/ST students

The Vice-Chancellor of Jawaharlal Nehru University has constituted a seven-member committee to identify the nature of remedial courses to be organised at the University campus for students belonging to weaker sections of society like Scheduled Castes and Scheduled Tribes.

The Committee, with Dr. Kapil Kapoor as its convenor, will formalise suitable schemes and programmes to make up for the deficiency of the earlier school education of such students.

The main objective for devising remedial courses for such students is to provide special assistance, necessary guidance and suitable training to them to come up to the level necessary for pursuing higher studies efficiently.

The committee, comprising Dr. L.K. Pande, Dr. R.G. Gupta, Dr. R. S. Gupta, Dr. K. C. Upadhyaya, Dr. Karuna Ahmad and Prof. T.T. Poulose will meet shortly to identify specific courses in respective disciplines as also teaching material and aids required for the courses.

We Congratulate....

Shri F. Ahmad who has been reappointed for a further term of 3 years as Vice-Chancellor of Magadh University w.e.f. April 27, 1985.

News from Agril. Varsities

PAU to impart training in computers

Dr. Sukhdev Singh, Vice-Chancellor of the Punjab Agricultural University, while presiding over the concluding function of a training programme in Systems Approach and Computer Use" organised at PAU campus at Ludhiana recently, said that systems approach and computer use were powerful tools for agricultural research and education. He told that substantial allocation (Rs. 1 lakh) had been made in this year's budget of the University to train the agricultural scientists in systems approach and computer use.

The training course was organized by the Department of Electrical Engineering of the University in which 25 teachers participated.

While giving an account of the training course Dr. R.K. Varshney, Head of the Department of Electrical Engineering elaborated how the research efforts in the area of Plant Disease Epidemic and Pest Management had been modernized through the use of systems approach and computer application. Dr. Varshney also dwelt on how the theory of large-scale systems and fuzzy sets could be profitably used to undertake the study of Punjab Agriculture as in the total economy of Punjab.

Nutrition week concludes at PAU

While presiding over the concluding function of the Nutrition Week organised recently by PAU, Dr. Sukhdev Singh, Vice-Chancellor of the Punjab Agricultural University said that only seasonal fruits and vegetables should be used in homes. He advised that to avoid the health hazards of the chemicals used for the preservation, use of off-season fruits and vegetables should be discouraged.

Dr. (Mrs) K.K. Sharma, former Executive Director in the Union Ministry of Food and Civil Supplies highlighted the importance of nutrition week and stressed the importance of growing food by every family.

The Nutrition Week was celebrated by the Department of Foods & Nutrition, College of Home Science of PAU to educate the school teachers, Child Development Project Officer and supervisors of the Department of Social Welfare on the importance of nutrition.

Dr. (Mrs) P.L. Srivastava, Dean of the College of Home Science in her address emphasised the proper food distribution in the family.

Reaper demonstration at PAU

While presiding over the concluding function of a two-day training course in Harvesting Machinery organised at PAU campus at Ludhiana recently, Dr. Sukhdev Singh, Vice-Chancellor of the Punjab Agricultural University said that efficient harvesting machinery was a must for the farmer of Punjab as timely harvesting of the crop enabled him to take-up other farm operations in time. He further said that Punjab farmers had invested huge amounts of money on farm machinery and therefore, it was necessary to use it with utmost care. The

Vice-Chancellor called upon the manufacturers to maintain the quality of their machines and provide after sales service to the farmers. The Vice-Chancellor told that 12 district extension specialists (Agricultural Engineering) would soon be appointed at the District level to guide the farmers about the proper handling and maintenance of all kinds of farm machinery.

A big demonstration of various types of tractor operated front mounted reapers was organized by the Training Unit of the College of Agricultural Engineering. More than 10 reaper manufacturing units demonstrated their machines.

Dr. S.R. Verma, Dean of the College of Agricultural Engineering said that the objective of this demonstration was to create an awareness among the farmers about the working of time and labour saving harvesting machines. He told that about 40 units in Punjab were manufacturing these machines and more than 3,000 reapers were being used by farmers.

Dr. L.N. Shukla, Head of the Department of Farm Power and Machinery told that work on a paddy transplanter and a power cotton sprayer was in progress.

News from UGC

INSAT 1-B Programme of UGC

Between 16th and 31st May, 1985, the following schedule of telecasts on higher education through INSAT-1B under the auspices of the University Grants Commission will be observed. The programme is of one hour duration every day from 12.45 p.m. to 1.45 p.m. (Repeated from 4 p.m. to 5 p.m.) and will be available on the TV network throughout the country. For the viewers in Delhi and surrounding areas, these programmes can be seen on the second channel.

16.5.85

"Induced Breeding"
"Phytotron of Gif-Sur-Yvette"

17.5.85

"The Ozone Story"
"Biogas"
"Chemistry help in Archaeology"
"Electrochemistry in Action"

18.5.85

"Man in the Environment"
"Recycling"
"Air to Live"
"TV Satellite"

19.5.85 (Sunday)

No Telecast

20.5.85

"The Unstable Nucleus"
"Nuclear Countdown"
"Science World"

21.5.85

"Cocoa Cultivation"
"Food From the Sea"
"Harvesting the Sea"
"TV Satellite"

22.5.85

"Surprise Given by Molecules"
"Cathode Ray Oscilloscope"
"The Giant Linear Accelarator at Orsay"

23.5.85

"Plants All at Sea"
"Migrating Butterflies"
"Science World"

24.5.85

"Jupiter Odyssey"
"The Universe-1"
"Science World"
"TV Satellite"

25.5.85

"Save the Forests"
"Warning Signal"
"Erosion Control"
"TV Satellite"

26.5.85 (Sunday)

No Telecast

Association of Indian Universities

AIU House, 16 Kotla Marg, New Delhi-110002

Applications are invited by 4th June, 1985 on the prescribed forms available on payment of Rs.2/- from the office of the Association of Indian Universities for the following posts:

1. **Cultural Officer** (Rs 700-1300): Master's Degree from a recognised institution/university with a Bachelor's Degree in Fine Arts or its equivalent from a recognised uinversity/organisation. Five years experience with a minimum of two years in organising cultural activities at University or equivalent level. Incumbent will be responsible for organising cultural programmes at Inter-University/National Levels. Deputation from University/Colleges/other organisations will be preferred. (Well qualified candidates may also be considered for the higher scale of Rs. 1100-1600).
2. **Assistants** (Three) (Rs. 425-800) — Graduates with atleast five years experience in Govt./Semi-Govt. Organisations/Educational Institutions. Knowledge of typing will be preferable. In addition: For post (i) Candidates should be B.Com. (Hons.) with atleast second division or B.Com with first division. Knowledge of use of computers in accounts will be preferable. For post (ii) Experience in production, printing and proof reading. For post (iii) Flair in noting & drafting, familiarity with office procedures.
3. **Stenographer** (Rs. 425-800): Graduate having speed of 120/60 w.p.m. in shorthand/typing with minimum three years experience as Junior Stenographer.
4. **Lower Division Clerk** (Rs. 260-400) : Higher Secondary with typing speed of 40 w.p.m. Preference will be given to those having office experience and knowledge of shorthand.

Posts are temporary but likely to continue.

All posts carry AIU allowances generally at the Central Government rates. Preference will be given to SC ST Ex-servicemen.

27.5.85

"Cathode Ray Oscilloscope-II"
"Nuclear Energy"
"Tomorrow's Energy"

28.5.85

"The Past is Prologue"
"Beauty in Stone"
"Modern Methods of Archeology"
"TV Satellite"

29.5.85

"Cathode Ray Oscilloscope-III"
"Geothermal Energy"
"Power from the Earth"
"Science World"

30.5.85

"Plants-High & Dry"
"Parasities"
"Snakes: Know them well"

31.5.85

"The Farthest Frontier"
"The Universe-II"
"Solar Observatory"
"Science World"

News from Abroad

Demographic department in Moscow State University opened

A demographic department has been opened at the Economic Faculty of the Moscow State University. It will train students to apply demographic analysis in drafting economic and social development plans or those engaged in the registration and use of manpower, organisation of health services, urban construction and transportation.

Diplomaed specialists in this field with vast practical experience will be admitted for a six-month course of advanced training.

The curriculum includes lectures on seventeen subjects, visits to central government agencies and intensive practical work with due account taken of each student's professional interests.

The students will have to write research papers suggesting solutions for some of the urgent problems of demographic planning on the conclusion of the course.

[Courtesy: Soviet Features, April 25, 1985]

CALENDAR OF EVENTS

Proposed Dates of the Event	Title	Objective	Name of the Organising Department	Name of the Organising Secretary/Officer to be contacted
May 25-June 8, 1985	UGC Sponsored Workshop on "A Possible Methodology for Teaching English for Communication at undergraduate level".	To explore the possibilities of evolving and developing new strategies in the teaching of core English for communication at the undergraduate level and also to effect improvement of curricula, teaching methods, examination reforms, etc.	Faculty of English, Gandhigram Rural Institute, Gandhigram	Shri M.R. Kubendran, Faculty Member.
June 3-8, 1985	UGC Sponsored Symposium on Arthur Miller as representative of American Drama.	—	Govt. Postgraduate College, Dharamsala (H.P.)	Dr. Atma Ram, Principal
November, 28-29 1985	International Conference on New Technologies in Higher Education	To assess the possibilities of the now available new technologies in the background of the broad social and cultural context and the state and trends of Higher Education in India and other developing countries	Association of Indian Universities, IIT/Delhi, JNU, Jamia Millia and University of Delhi	Prof. Tapas Mazumdar (JNU), Prof. S. Shukla (Jamia Millia), Prof. L.R. Shah (JNU)
December 12-14, 1985	Asia Pacific Symposium on Wind Engineering	Nature of wind and effect on structures and study of damage and its socio economic implications	Civil Engg. Department, University of Roorkee, Roorkee	Dr. S. K. Pathak, Organising Secretary
December 16-18, 1985	Indian Geotechnical Conference	To advance the state of knowledge about the geotechnical engineering and to give definite direction to the future research work	Earthquake Engg. Department, University of Roorkee, Roorkee	Dr. V. H. Joshi, Organising Secretary

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The columns 'Theses of the Month' and 'Research in Progress' are intended to cut out the time lag between the receipt of information and its inclusion in bibliography. Such Universities as are not sending us regular information in respect of Doctoral Theses accepted and research scholars enrolled are welcome to make use of these columns.

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RESEARCH IN PROGRESS

A list of Research Scholars Registered for Doctoral Degrees of Indian Universities

PHYSICAL SCIENCES

Mathematics

1. Gupta, Ram Chandra. *Theory of relativity.* BHU, Varanasi. Prof. S.R. Roy.

Statistics

1. Balkrishana, Jadhav Dattaji. *Some contributions to statistics/inference.* Shivaji U, Kolhapur. Dr. M.S. Prasad.

2. Hosseinzadeh, Issa. *Demography.* BHU, Varanasi. Dr. B.N. Bhattacharya.

3. Kulkarni, Raja V. *A study of the optimal inventory policies.* Shivaji U, Kolhapur, Dr. M.S. Prasad.

4. Sreekumaran Nair, N. *Analysis of stochastic matrix through semigroup theory.* U Ker, Trivandrum. Dr. R.N. Pillai.

Physics

1. Bhaduri, Madhumita. *Superionic materials and devices.* BHU, Varanasi. Prof. S. Chandra.

2. Gupta, Krishna Kumar. *Study of QCD-oriented confinement mechanism for composite systems.* U Delhi. Dr. A.N. Mitra.

3. Kapoor, Ratna. *Transport poportion in compound semiconductors at low temperature.* U Delhi. Dr. P.N. Dheer.

4. Kshirsagar, M.J. *Luminescence studies of ZnO phosphors.* Shivaji U, Kolhapur. Dr. C.S. Shalgaonkar.

5. Sahni, Manjeet Kumar. *Investigations of the galvanomagnetic properties of metal thin films at low temperatures.* U Delhi. Dr. Raj Rup.

6. Saxena, Akhilesh Kumar. *Proton superionic conductors and devices.* BHU, Varanasi. Dr. P.N. Gupta.

7. Sunil D. *Conformational studies of some biomolecules.* BHU, Varanasi. Dr. J.S. Yadav.

8. Yadwa, Lalji Singh. *Quantum chemical studies on the electronic structure and relations of some molecules.* BHU, Varanasi, Dr. J.S. Yadava.

Chemistry

1. Agrawal, Abha. *Electrochemical conorion studies of alloys.* BHU, Varanasi Dr. Ravindra Nath Singh.

2. Deo, Mukul Narayan *Electrochemistry Glowdischarge electrolysis.* BHU, Varanasi. Dr. S. Sengupta.

3. Dixit, Satish Chandra. *Preparation and chracterisation of bis (cyclopentadine) zirconium (IV) chlonde derivatives with ligands containing nitrogen, oxygen and sulphur.* U Delhi. Prof. R.N. Kapoor.

4. Gopalakrishna, K. *Studies on peptide nucleotide recognition.* U Delhi. Dr. M.V.R. Rao.

5. Kushwaha, Dinesh Singh. *Coordination chemistry studies in lanthanide complexes of Schiff's bases.* BHU, Varanasi. Dr. Bachcha Singh.

6. Mishra, Ghanshyam Kumar. *Chemistry of the purex process with particular reference to technatium.* BHU, Varanasi. Dr. Rajendra Narain Singh.

7. Pandey, Jay Prakash. *Photovoltaic electrochemical cell.* BHU, Varanasi. Dr. Lal Bahadur.

8. Shukla, Usha. *Platinum graphite biomperometry.* BHU, Varanasi. Prof. B. B. Prasad and Dr. R.N. Singh.

9. Singh, Nagesh Kumar. *Complexes of some trivalent transition metal ions with NNO and NNS ligands.* BHU, Varanasi. Dr. K.K. Narang.

10. Singh, Udai Pratap. *Physico-chemical methods for the determination of metal-ligand equilibria* BHU, Varanasi. Dr. A.K. Ghose.

11. Tiwari, Daya Shankar. *Studies on electro-chemical synthesis and analysis of organic compounds related environment.* BHU, Varanasi. Dr. R.A. Mishra.

Earth Sciences

1. Saraf, Kamlesh Kumar. *Structure, petrology and geochemistry of the traps in selected areas between Barwaha and Barwani.* HS Gour, Sagar. Prof. T.V.V.G.R.K. Murti.

2. Tiwari, Sharad. *A study of the Deccan trap flows and of the geomorphology of the Asirgarh area, Khandwa District, M.P.* HS Gour, Sagar. Prof. T.V.V.G.R.K. Murti.

3. Verma, Ratna. *The study of environmental geology of the area around Bhopal City with a special attention to the land use planning.* HS Gour, Sagar. Dr. S.N. Pandey.

Engineering & Technology

1. Adil, Shakir Hussain. *Distribution of nannoplanktons in some mesozoic and tertiary rocks of India: Their biostratigraphy and correlations.* HS Gour, Sagar. Dr. G.N. Saxena.

2. Chakrabarti, Parthasarathi. *Studies on millimeter wave impatt diodes.* BHU, Varanasi. Dr. B.B. Paul.

3. Chattopadhyay, Somnath. *Studies on mos fet/mes fet devices.* BHU, Varanasi. Dr. B.B. Paul.

4. Dewan, Vandana. *Switching theory and logic design.* BHU, Varanasi. Dr. Raghu Nath.

5. Durga Prasad, Chadalapaka. *Electronic properties of oxide perovskites.* BHU, Varanasi. Dr. Om Prakash.

6. Durge, Madhusudan. *Geology of the rocks of the Patharia Hills, Sagar M.P.* HS Gour, Sagar.

7. Jain, Arvind Kumar. *Geology, sedimentation and economics of the Bijawar group in the type area.* HS Gour, Sagar. Dr. G.N. Saxena.

8. Joshi, Chandra Shekhar. *Major thermal power plants of Madhya Pradesh and their impact of the environment.* HS Gour, Sagar. Dr. P.O. Alexander.

9. Khare, Pankaj. *Lithology and sedimentology of lamete rocks in Sagar and adjoining area of M.P.* HS Gour, Sagar. Dr. G.N. Saxena.

10. Kurian, Jacob. *Study of hydrogen in metallic glass.* BHU, Varanasi. Prof. T.R. Anantharaman.

11. Lamech, Soloman Manoharan. *Optimal design of space structures.* BHU, Varanasi. Prof. B.N. Roy.

12. Malya, Anil Kumar. *Rock and water interaction in the weathered Deccan trap basalts of Malwa Plateau,* India. HS Gour, Sagar. Dr. S.K. Lumfar.

13. Mittal, Rajiv. *Production system.* BHU, Varanasi. Dr. Anand Shanker.

14. Narasimham, B.L. *Improving uppershelf energy in pearlitic steels.* BHU, Varanasi. Dr. T. Mukherjee.

15. Pandey, O.P. *Impact of composition and production variables on the properties of metallic glasses.* BHU, Varanasi. Prof. T.R. Anantharaman and Dr. G.V.S. Sastry.

16. Parvinder Singh. *Hydrogeological and engineering aspects of Bina River Valley, Madhya Pradesh, India.* HS Gour, Sagar. Dr. L.P. Chaurasiya.

17. Prabhakar, Gatade Subhash. *Vibration and wave-propagation.* BHU, Varanasi. Dr. P.C. Upadhyay.

18. Prasad, A.J.K. *Studies in composite materials containing metallic glasses.* BHU, Varanasi. Prof. T.R. Anantharaman and Dr. Ravi Prakash.

19. Prem Chand. *Stability of metals and alloys at high temperature under mixed gas atmosphere.* BHU, Varanasi. Prof. O.N. Mohanty and Prof. V.B. Tare.

20. Rai, B.N. *Study of hydrodynamic and heat and mass transfer characteristic of loop reactors.* BHU, Varanasi. Dr. S.N. Upadhyay.

21. Rai, Kamlesh. *Effects of mining on environment and its prevention in Jharia coalfields.* HS Gour, Sagar. Prof. Bhagwan Das.

22. Satyendra Narayan. *Evaluation of insitu stresses in non-coal mines by hydro-fracturing technique.* BHU, Varanasi Dr. B. Singh and Dr. D.P. Singh.

23. Sharma, Rakesh Kumar. *Studies in catalytic behaviour of metallic glasses.* BHU, Varanasi. Prof. T.R. Anantharaman and Prof. V. Shankar.

24. Singh, Kamla Kant. *Real time analysis and control of power systems.* BHU, Varanasi. Prof. G.K. Rao and Shri D.S. Chauhan.

25. Verma, Rama Shankar. *Physical metallurgy of medium carbon steels.* BHU, Varanasi. Dr. V. Ramaswamy.

26. Verma, Sudhir Kumar. *Quality of surface and ground waters of the Chambal command part of the area in Madhya Pradesh,* India. HS Gour, Sagar. Dr. L.P. Chaurasiya.

27. Yadava, Keshar Prasad. *Bending of rock structures.* BHU, Varanasi. Dr. J.G. Singh.

BIOLOGICAL SCIENCES

Biochemistry

1. Goyal, Ruby. *Role of lipid in biological functions of bacterial membranes.* BHU, Varanasi. Prof. (Mrs.) M. Chakravorty.

2. Khan, Saeed Ahmad. *Molecular biology of host-virus interaction.* BHU, Varanasi. Prof. (Mrs.) M. Chakravorty.

3. Mishra, Mahendra Prasad. *A chemical and pharmacological study of some plant drugs.* BHU Varanasi. Dr. H.P. Pandey and Dr. R.H. Singh.

4. Mishra, Manjula. *Metabolism of germinating rice seeds under salt stress.* BHU, Varanasi. Dr. R.S. Dubey.

Botany

1. Das, Swapan Kumar. *Cytogenetics and plant breeding.* BHU, Varanasi. Prof. S.K. Roy.

2. Jain, Motilal. *Investigations on algae and their ecology around Barman, M.P.* HS Gour, Sagar. Dr. A.D. Adoni.

3. Jaiswal, Namita. *Ecology and control of diseases of some forest tree species in nurseries.* HS Gour, Sagar. Prof. G.P. Misra.

4. Jha, Mitra Nath. *Ecology of some common plants of cropland.* BHU, Varanasi. Dr. H.R. Sant.

5. Mishra, Gayatri. *Tayo-ecology of soils fungi from Pachmarhi Region.* HS Gour, Sagar. Dr. A.S. Mishra.

6. Mohammad Nurul Amin. *In vitro morphogenetic studies of some economically important plants.* BHU, Varanasi. Dr. V.S. Jaiswal.

7. Pandey, Arvind Bhushan. *Reltaive role of psedation and competition in determining algal community structure.* BHU, Varanasi. Prof. H.D. Kumar.

8. Rai, Sunita. *Ecological studies of two medicinal plants from Vns.* BHU, Varanasi. Dr. H.R. Sant.

9. Rathor, Rajendra Singh. *Biodegradation of keratin: Physiological and biochemical study of keratinophilic fungi and related dermatophytes from the soils of M.P.* HS Gour, Sagar. Dr. S.C. Agrawal.

10. Sathapak, Madhu. *Studies on the leaf spot fungi with special reference to the role of their toxic metabolites in pathogenesis.* HS Gour, Sagar. Prof. K.M. Vyas and Dr. A.S. Misra.

11. Singh, Abha. *Mutagenesis of cyanobacteria under anaerobiosis.* BHU, Varanasi. Prof. H.D. Kumar.

12. Singh, Dhirendra Kumar. *Cytogenetics.* BHU, Varanasi. Prof. S.K. Roy.

13. Singh, Krishna Pratap. *Microbial ecology and plant pathology.* BHU, Varanasi. Dr. R.S. Upadhyaya and Dr. Bharat Rai.

14. Singh, Rakesh Kumar, *Blue-green algae.* BHU, Varanasi. Dr. S.P. Singh.

15. Singh, Surya Kumar. *Microbial ecology and plant pathology.* BHU, Varanasi. Dr. D.K. Arora and Dr. Bharat Rai.

16. Singh, Vinod Kumar. *Plant ecology.* BHU, Varanasi. Prof. J.S. Singh.

17. Shukla, Ashok Kumar. *Studies on some rubber and plastic degrading fungi.* HS Gour, Sagar. Dr. P.C. Jain.

18. Solanki, Rajendra Singh. *Effects of air pollutants on phyllo-plane microflora of rice in relation to disease development.* BHU, Varanasi. Dr. Bharat Rai.

19. Srivastava, Ajit Kumar. *Ecology.* BHU, Varanasi. Prof. R.S. Ambasht.

20. Tripathi, Durga. *A study of the epidermal structures and their taxonomic significance in leguminosae.* HS Gour, Sagar. Dr. T.R. Sahu.

21. Tripathi, Jawahar. *Plant ecology.* BHU, Varanasi. Dr. G.M. Choudhari.

22. Trivedi, Smita. *Microbiology.* BHU, Varanasi. Dr. D.K. Arora.

23. Upadhyay, Vimal Kumar. *Ecological studies of two important weeds of Vns.* BHU, Varanasi. Dr. H.R. Sant.

24. Verma Subodh Kumar. *Plant ecology.* BHU, Varanasi. Prof. J.S. Singh.

25. Yadava, Vijay Kumar. *Phytomass structure of some dry deciduous forests.* HS Gour, Sagar. Prof. C.P. Misra.

26. Yeshwant Singh. *Mutagenesis of an economically valuable alga.* BHU, Varanasi. Prof. H.D. Kumar.

Zoology

1. Agrawal, Sunita. *Metabolic changes in different tissues of fresh water fishes.* BHU, Varanasi. Dr. S.P. Shukla.

2. Amita Singh. *Profile of reproductive events and their regulation in a fresh water gold fish.* BHU, Varanasi. Dr. T.P. Singh.

3. Anita Kumari. *Studies on the influence of pollution on fish skin.* BHU, Varanasi. Dr. A.K. Mittal.

4. Babu, Ranjana. *Effects of cyclic adenosine monophosphate on malignancy: Cells from tissue culture.* HS Gour, Sagar. Prof. R.S. Saini.

5. Bansal, Manjula. *Neuroendocrine control of avain reproduction.* U Delhi. Dr. R.N. Saxena.

6. Harilal, K.S. *Effect of some pesticides on the gonads of fish.* HS Gour, Sagar. Dr. Y.N. Sahai.

7. Jagdish Chandran, G. *Comparative studies on the pituitary gland of some fishes.* HS Gour, Sagar. Dr. (Smt.) S. Sahai.

8. Jagdish Prasad. *Chromatin organization of meiotic cells.* BHU, Varanasi. Dr. R. Raman.

9. Kahrizsangi, Rasoul Salehi. *Studies of insect neuroendocrinology.* BHU, Varanasi. Prof. K.P. Srivastava.

10. Kesharvani, Bharat Kumar. *Haemotological studies of some fresh-water teleosts with reference to chlorinated hydrocarbons.* HS Gour, Sagar. Dr. V.S. Bains.

11. Khan, Izhar Ahmad. *Studies on teleost reproduction.* BHU, Varanasi. Dr. K.P. Joy.

12. Manickam, P. *Studies on têleost reproduction.* BHU, Varanasi. Dr. K.P. Joy.

13. Narvariya, Usha. *Cyto-physiological studies of the corpuscles of teleost-fish.* HS Gour, Sagar. Dr. G.P. Gupta.

14. Palha, Rajvinder Singh. *Pesticide induced effects in some tissues of a teleost fish.* HS Gour, Sagar. Dr. Y.N. Sahai.

15. Pandey, Jayotsna. *Methyl isocynate, its effects on blood/serum enzymes/respiratory enzymes, free amino acids and certain phospholipids of the various organs of some mammals.* HS Gour, Sagar. Dr. D.K. Saraf.

16. Roy, Sujata. *Gene excression in drosophila.* BHU, Varanasi. Dr. S.C. Lakhotia.

17. Sanyal, Kumarika *Some aspects of insect development.* BHU, Varanasi. Prof. K.P. Srivastava.

18. Sharma, Jaya. *Studies on the brain of a fish with reference to the effect of some pesticides.* HS Gour, Sagar. Dr. Y.N. Sahai.

19. Shukla, Sanjive. *Effect of some insect growth regulators on insects.* BHU, Varanasi. Prof. K.P. Srivastava.

20. Singh, Pawan Kumar. *Parasitology.* BHU, Varanasi. Dr. G.P. Agrawal.

21. Singh, Prem Nath. *Studies on insect reproduction.* BHU, Varanasi. Prof. K.P. Srivastava.

22. Sinha, Neelima. *Studies on the skin of fresh water teleost.* BHU, Varanasi. Dr. A.K. Mittal.

23. Sukh Mahendra Singh. *Cell biology and immunology.* BHU, Varanasi. Dr. A. Sodhi.

24. Tamang, Puspa *Systematics, distribution and ecology of ichthyospecies of Sikkim and their bearing on the fish and fisheries of the state.* Gauhati U.

25. Tiwari, Ram Manohar. *Endocrine control of reproductive cycle in teleost fish in relation to external environment.* HS Gour, Sagar. Dr. A.K. Raizada.

26. Verma, Varsha. *Effect of Jh. Ecdysone and other ovarian factors on the regulation of reproduction in insects.* HS Gour, Sagar. Prof. R.S. Sani.

Medical Sciences

1. Badla, Uma Devi. *A comparative study of psycho-social aspect of leprosy patients in urban and rural communities of Vijayawada, A.P.* BHU, Varanasi. Dr. K.P. Shukla.

2. Bhupinder Singh. *Some investigations on florides.* BHU, Varanasi. Prof. S.S. Gambhir.

3. Choudhury, Pratim Kumar. *Study of the preparation and evaluation of suppositories.* BHU, Varanasi . Dr. J.K. Pandit.

4. Kundu, Sujata. *Chemistry for Indian medicinal plants.* BHU, Varanasi. Prof. A.B. Ray.

5. Kusum Lata. *Physical growth in affluent class children.* BHU, Varanasi. Dr. A.M. Tripathi.

6. Malviya, Pramod. *Studies on trace elements in health and disease in relation to constitution.* BHU, Varanasi. Dr. J.P.N. Chansuria, Prof. G.P. Dubey and Prof. K.N. Udupa.

7. Pande, Arti. *Latent iron deficiency and brain enzymes.* BHU, Varanasi.

8. Prasad, A.V. *Cytogenetic studies on carcinoma of cervix.* BHU, Varanasi. Prof. Saroj Gupta.

9. Prasad, Datla Krishna. *Mechanism of drug and electrically induced aggressive behaviour in experimental animals.* BHU, Varanasi. Prof. P.C. Dandiya.

10. Sen, Ananda Prasad. *Muscarinic cholinergic receptors delineation in certain drug induced experimental conditions.* BHU, Varanasi. Dr. G. Jagadeesh.

11. Sharma, Subramaniam Vishwanath. *Osteoporosis.* BHU, Varanasi. Prof. T.P. Srivastava.

12. Shukla, Punam Rani. *A study of concept of psychosomatic in Indian medicine and the assessment of anxieties in diseases and bronchial asthama.* BHU, Varanasi. Prof S.N. Tripathi.

13. Siddiqui, Nadeem. *Synthesis of potential CNS active agents.* BHU, Varanasi. Dr. S.N. Pandeya.

14. Singh, Mridula. *Studies of prakriti in relation to urine cancer and its management by ayurvedic drugs.* BHU, Varanasi. Dr. G.C. Prasad.

15. Singh, Ram Pyare. *Ecology of edible fishes.* BHU, Varanasi. Prof. S.D. Gaur.

16. Singh, Ram Pyare. *Evaluation of renal status in rats on short and long term herbal diuretics.* BHU, Varanasi. Dr. K.P. Shukla.

17. Singh, Sushil Kumar. *Chemistry of polycylic secondary metabolites from some amaryllidaceous plants.* BHU, Varanasi. Prof. S. Ghosal.

18. Tewary, Prabhat Kumar. *Biological availability of some highly insoluble drugs stored under various storage conditions.* BHU, Varanasi. Dr. J.K. Pandit.

19. Tiwari, Pramod. *Promotion of oral rehydration therapy through educational methods.* BHU, Varanasi. Dr. D.C.S. Reddy.

20. Tripathi, Suresh Krishna. *Rural environment and mental health in early childhood.* BHU, Varanasi. Dr. D.K. Agrawal.

21. Tripathi, Yogesh Chandra. *Chemistry of medicinal plants.* BHU, Varanasi. Dr. V.B. Pandey.

22. Veena, *Behaviour modification.* BHU, Varanasi. Dr. Ratan Singh and Dr. (Mrs.) S.S. Kaushik.

23. Verma, Asha. *Charak samhita mein swastha vritta.* BHU, Varanasi. Dr. K.P. Shukla.

24. Verma, Rajendra Prasad. *A study on psychosomatic background of irritable bowel syndrome.* BHU, Varanasi. Dr. R.H. Singh.

THESES OF THE MONTH

A list of Doctoral Theses Accepted by Indian Universities

PHYSICAL SCIENCES

Mathematics

1. Darogi Singh. *Multiple criteria decision making: Preference modelling using fuzzy sets.* IIT, Kharagpur.

2. Dutta, Salila. *Studies on some aspects of certain paranormed spaces of analytic functions.* IIT, Kharagpur.

3. Ghosh, Muktimoy. *On some problems of wave propagation in semi infinite elastic media.* NBU, Rajarammohunpur.

4. Sathyavathi, T.R. *Facility location on networks.* IIT Kharagpur.

5. Venkateswarlu. Sarada Chittari. *Applications of functional analysis to problems in fluid mechanics and magneto fluid mechanics.* Nagpur U.

6. Verma, N.V.P.S.S.S.K.M.G.H. *Some probabilistic facility location problems on plane and spherical surface.* IIT, Kharagpur.

Statistics

1. Agrawal, Prabha. *On certain applications of operations research techniques in industry.* RSU, Raipur.

Physics

1. Aggarwal, Navin. *Hyperfine interactions through perturbed angular correlation techniques.* Pb U, Chandigarh.

2. Ambika Prasad, M.V.N. *A lattice dynamical study of metals and semiconductors.* IIT, Delhi.

3. Chaki, Tapan Kumar. *Microwave, dielectric and mechanical behaviour of some homopolymers, co-polymers, blends.* IIT, Kharagpur.

4. Chaudhary, Rama Kant. *Study of optical absorption thermoluminescence and dielectric properties of CaF_2: Sm (OR Gd) selenite and barytes with X-ray irradiation and effect of magnetic and electric fields on F-band absorption of NaCl and KCl.* IIT, Kharagpur.

5. Deuskar, Sulbha A. *Study of postronium pick off process in organic liquids.* U Poona.

6. Dhar, Animesh. *On some aspects of degenerate electron gases in semi-conductors and related phenomena.* U Calcutta.

7. Joshi, Narendra N. *Biophysical studies on redistribution of surface receptors on murine lumphocytes.* U Poona.

8. Joshi, Varsha Arun. *Mossbauer, sem and magnetization studies of cobalt doped and nickel doped gamma femic oxide.* U Poona.

9. Nageswararao, Nanduri B. *X ray photoelectron spectroscopic studies and property measurements on electoless nickel and copper deposits.* U Poona.

10. Rajadhyaksha, Medha S. *Flow cytofluorometric studies on surface characteristics and kinetic status of hemopoietic cells.* U Poona.

11. Sankara Sastry, Oruganti. *Opto-electronic characterisation of large area solar cells.* IIT, Delhi.

12. Sen, Manas Ranjan. *Studies on dielectric properties and some aspects of colour centres produced by-x-rays in bi-doped NaCl and high AC field treated CaF_2 and Mn-doped CaF_2 single crystals.* IIT, Kharagpur.

13. Sharma, Ashutosh. *On the fluroescent state of organic molecules: Dielectric solvent effect.* U Delhi.

14. Sharma, Ram Kumar. *Laser and electron beam induced crystallization of amorphous germanium thin films.* U Delhi.

15. Somani, Kanika. *Experimental studies on the characteristics of low and high density lipoproteins, serum and hemeproteins in pulmonary tuberculosis using magnetic resonance, dielectric atomic absorption and immuno-diffusion techniques.* U Delhi.

16. Suresh Kumar. *Study of charmed hadron production in p-emulsion interactions at* 400*Ge V/c.* U Jammu.

17. Thakur, Dharam Singh. *Effects of viscosity variation in some flow problems.* HPU, Shimla.

Chemistry

1. Abhyankar, Sunanda R. *Pratisakhya-jyotsna (A commentary on S.Y.V. Pratisakhya) : A critical edition with introduction.* U Poona.

2. Ajaib Singh. *Study of complexes of heterocyclic bases with transition metal carboxylates.* Pbi U, Patiala.

3. Anjaneyulu, Kotha. *Anaerobic digestion of seaweeds for biogas production.* Saur U, Rajkot.

4. Azizur Rahman. *Newer synthetic methods for novel heterocyclics via oxo-ketene S.N.-acetals.* NEHU, Shillong.

5. Bagchi, Loknath. *Studies on the interaction of a bipyricylium herbicide, paraquat, with clay minerals, resins and molecular sieve.* NBU, Rajarammohunpur.

6. Bajaj, Bhupinder Kaur. *Synthetic studies on structures of biological importance.* PAU, Ludhiana.

7. Baljit Kaur. *Conjugated-Lactones, their chemistry and biological activity.* PAU, Ludhiana.

8. Beer Singh. *Synthesis and characterization of bimetallic (AL(III), Mn(II) U-oxoisopropoxide derivatives with N, O and S containing ligands* . U Delhi.

9. Bhadani, Gunvantray Vrajlal. *Studies on metal chelates.* Bhavnagar U.

10. Bhar, Jayanta Kumar. *Coordination complexes of cobalt vanadium and molybdenum: Synthesis, characterization and biological activity.* U Kalyani.

11. Bhattacharya, Somnath. *Reduction of aromatic nitrocompounds and alkenes by palladium (II) complexes.* IIT, Kharagpur.

12. Biswas, Amal Kumar. *Compounds of boron synthesis: Characterisation and biological activity.* U Kalyani.

13. Chandani, Bina. *Some studies on the structure and aggregation of meltin in aqueous and membraneminetic media.* U Hyderabad.

14. Chattopadhyay, Sakuntala. *Studies on synthesis and chemical modification of polymer.* IIT, Kharagpur.

15. Choudhury, Satyendra Kumar. *Analytical investigations on the chelation behaviour of 3-amino-5,6 DI (2-pyridyl)-1, 2, 4-triazine (ADPT) and acenaphthenequinonemonoxime (AQM).* U Delhi.

16. Daljeet Singh. *Acid catalysed condensation of but-1, 3 diene and but-3-EN-2-OL with phenolics and synthesis of some coumarin derivatives.* U Delhi.

17. Goverdhan Reddy, K. *Studies on formation of some binary and ternary complexes with bivalent transition metal ions.* OU, Hyderabad.

18. Gupta, Hari Om. *Studies on plant constituents.* HS Gour, Sagar.

19. Gursharan Singh. *Investigations on compounds synthesised from oxomolybdenum (VI) chloride.* Pb U, Chandigarh.

20. Hadimani, B.S. *Studies on some metal complexes with ligands containing N, O & S hetero-atoms.* Gulbarga U.

21. Jagannadham, M.V. *Studies on the folding of polypeptides and proteins: Polysopeptides, papain and human carbonic anhydrase B.* U Hyderabad.

22. Jain, Manju. *Chemical study of some indigenous medicinal plants.* HS Gour, Sagar.

23. Koner, Dhananjoy. *Coordination and organometallic compounds of iron and cobalt.* U Kalyani.

24. Mahapatra, Bhabagrahi. *Adsorption studies on the suspension of ferric oxicde* Sambalpur U.

25. Malik, Vijay Kumari. *Stereochemical studies on some transition metal chelates of accetophenone semicarbazone and acetophenone thiosemicarbazone.* U Delhi.

26. Moinuddin Ahmad. *A study of some organic reaction mechanisms.* Berhampur U.

27. Moitra, Shipra. *Sorption and desorption studies of some amino acids on chemically pretreated alumina in relation to chromatography.* RSU, Raipur.

28. Mondal, Anup. *Preparation and characterization of some metal chalcogenide thin films.* IIT, Kharagpur.

29. Mukherjee, Kallol Kumar. *Investigation on some 2-alkylamido-6-bromo/chloro/nitro saligenin cyclic phosphorus compounds having pesticidal activities.* NBU, Rajarammohunpur.

30. Nandedkar, Usha N. *Studies on concanaval in a-polysaccharide interactions.* U Poona.

31. Nisha Kiran. *Investigations on complexation equilibria and analytical potentialities of some newly synthesized organic reagents.* U Delhi.

32. Parande, Madan Gururao. *Reaction engineering studies in a slurry reactor.* U Poona.

33. Patel, Pravinbhai Kantibhai. *Synthesis and characterization of poly (alkylene/arylene-2, 4-bisquinazonylyl amine.* SPU, Vallabh Vidyanagar.

34. Raizada, Shanti. *Investigations on transition metal complexes with substances of biological activity.* HS Gour, Sagar.

35. Rajgolkar, Raghunath L. *Reactions of metal complexes with diketones.* U Poona.

36. Ramana Rao, Peta Venkata. *Studies on preparation and some physico-chemical aspects of solid solution of phosphate and vanadate apatites of lead.* NEHU, Shillong.

37. Ray, Suparna. *Studies in vinyl polymerization and photo polymerization.* Utkal U, Bhubaneswar.

38. Sabne, Madhukar B. *Studies in cellulose: Modification of cellulose ester for use in desalination.* U. Poona.

39. Sanyal, Samir Kumar. *X-ray diffraction studies of amorphous carbons.* IIT, Kharagpur.

40. Sinha, Bharati. *Studies in (1) carbchydrates, and (2) lipid associates of leguminoseae (Lotiodeae).* U Poona.

41. Surinder Kumar. *Studies in azomethines.* Pbi U, Patiala.

42. Thakur, Uma. *Studies in chemistry of C-N bond in schiff bases.* Pbi U, Patiala.

43. Vinod Kumar. *Thermodynamics of metal complexes of some hydroxy-deoxybenzoins in ethanol-water system.* U Delhi.

44. Vishwanath Rao, V. *Synthesis of 28-nor triterpenoids, 3-a-aza-a-homo-3-thiones of triterpenoids and glochidone,* OU, Hyderabad.

45. Wadgonkar, Prakash P. *Studies in (1) telechelic diene polymers and (ii) silicon containing polymides.* U Poona.

46. Wakhole, Dhananjay M. *Study of the enzymes in Indian honeys.* U Poona.

Earth Sciences

1. Bhattacharya, Arun Kumar. *Geology of Raunsal Area, Tehri Garhwal with special reference to uranium mineralisation.* U Delhi.

2. Gopalakrishna, D. *Structural and petrological studies around Byalkuppe, Southern Karnataka with particular reference to charnockite: Gnesis complex relationship.* U Mysore.

3. Jagdev Singh. *Studies of solar atmosphere.* Pbi U, Patiala.

4. Muraleedharan, P.M. *Studies on equatorial under current in the Indian Ocean.* U Cochin.

5. Sahni, Manmohan. *Geology of the Thatri Area, Doda District, J & K State.* U Jammu.

Engineering & Technology

1. Bal, D.S. *Application of correlation concept to some engineering problems*. RSU, Raipur.

2. Bhakta, Ramesh Chandra. *Studies on the electroinitiated polymerization of some vinyl monomers in mixed biphasic media.* IIT, Kharagpur.

3. Bhaumik, Sajal Kanti. *Investigations into the movement of materials on vibratory spiral elevator.* IIT, Kharagpur.

4. Chit Ranjan Pratap. *A critical assessment of CTOD in small scale yielding and clastic-plastic crack growth situations.* IIT, Delhi.

5. Chowdhury, Kanchan. *Some aspects of the performance of cryogenic heat exchangers.* IIT, Kharagpur.

6. De, Nisit Kumar. *Modeiling , analysis and microprocessor-based state feedback control of thyristor bridge/DC motor drive.* IIT, Kharagpur.

7. De, Parameswar. *Studies on mass transfer under pulsations in gas-liquid systems.* IIT, Kharagpur.

8. Devadattam, D.S.K. *Studies on some properties of rice bran and its stabilization by dry heat and wet heat treatments using a conduction heating system.* IIT, Kharagpur.

9. Fahmida Khatoon. *Studies on the application of hydroxamic acids as volumetric reagents.* RSU, Raipur.

10. Jain, Ajit Kumar. *Studies of the acylation of some aromatic keytones with borontrifluoride.* Bhopal U.

11. Jothi, M. *Analysis of hydrodynamic problems using finite and infinite elements.* IIT, Delhi.

12. Karaulia, D.S. *Interaction of elastic waves with cracks.* Bhopal U.

13. Kirtania, Kumud Ranjan. *Concrete-polymer composite system.* IIT, Kharagpur.

14. Kulkarni, Ajit R. *Lithium ion conducting glassy solid electrolytes in the* LiE-Fi_2 O-$Al(PO_3)_3$- *system.* IIT, Kharagpur.

15. Maka, Srinivasu. *A systems theory approach to a reciprocal, passive, transformerless, multiport network synthesis.* IIT, Kharagpur.

16. Mishra, Dhanesh Kumar. *Tolerance allocation on beams, shafts and springs.* RSU, Raipur.

17. Nandula, Swarnalata Suryanarayan. *Ultrasonic investigations in some binary and ternary alloys.* MSU, Baroda.

18. Padmanabhan, K.K. *Damping at preloaded metallic interfaces subjected to cyclic tangential loads.* IIT, Kharagpur.

19. Pal, Dilip Kumar. *Stability analysis of externally pressurized gas lubricated porous bearings with journal rotation.* IIT, Kharagpur.

20. Pal, Matilal. *Analysis and behaviour of laterally loaded batter piles and pile bents.* IIT, Kharagpur.

21. Pathak, Manohar Wasudeorao. *Problems of insulations under highly polluted conditions during system operation and their remedial measures.* Nagpur U.

22. Pramod Prasad. *Parameter identification in multi-degree vibrating systems.* IIT, Kharagpur

23. Pullaiah, S. *Dehydrogenation studies of higher alcohols (n-heptanol and n-octanol).* OU, Hyderabad.

24. Rakesh Kumar. *System dynamics modelling for corporate planning: A modular approach for production systems:* IIT, Delhi.

25. Ram Nath. *Weak coupling, coherency and time-domain aggregation in power system transient stability studies.* IIT, Delhi.

26. Roy, Bhaskar. *Experimental studies of single and double droplet flames under stationary and rotating conditions.* IIT, Kharagpur.

27. Roy, Jatindra Nath. *Growth and chracterization of indium phosphide.* IIT, Kharagpur.

28. Sahay, Shyam Shankar. *Some studies on a comprehensive procedure for corporate long range planning using system dynamics and goal programming techniques.* IIT, Kharagpur.

29. Sahoo, Ranjit Kumar. *Heat and mass transfer in cryogenic regenerators.* IIT, Kharagpur.

30. Satya Narayana Murty, Ajjarapu Surya. *Flow of dusty liquids in rotating straight pipes.* Andhra U, Waltair.

31. Sharma, Sitaram. *Study of static dynamic characteristics of sandwich beams under various boundary conditions.* IIT, Kharagpur.

32. Shahsi Kumar. *A multilevel associative processor architecture for parallel processing.* IIT, Delhi.

33. Sinha, Arvind Kumar. *Design, development, testing and computer simulation of fluidyne pump.* IIT, Kharagpur.

34. Sreenivasulu, N. *Optimal eigenstructure assignment and application to power system dynamics.* Anna U, Guindy.

35. Subrahmanyam, J.P. *Studies on the nitrogen oxide emissions and performance characteristics of a spark ignition engine with exhaust gas recirculation (E.G.R.) using gasoline and methanol fuels.* IIT, Delhi.

36. Vasudevan Nair, N. *Studies on microstrip periodic structures with distributed loading.* IIT, Kharagpur.

UNIVERSITY NEWS

University News is published weekly by the Association of Indian Universities to promote awareness of contemporary thinking on higher education. Views expressed in the journal are those of the authors and do not reflect the policies of the Association.

Articles are invited by the Editor on matters relating to University education. Manuscripts (in duplicate) should be sent to Editor, University News, Association of Indian Universities, AIU House, 16 Kotla Marg, New Delhi-110002. They should be typed on one side of the paper, double spaced with wide margins. Each article should be accompanied by a summary/abstract of 100/150 words on a separate sheet.

Rates of subscription for University News are:

Period	Inland	Foreign	
		Surface Mail	Air Mail
	Rs.	Rs.	Rs.
1 Year	40	180	350
For Academics/ Students	30		
2 Years	72	330	650
3 Years	100	425	900
5 Years	150		

NOTICE

Applications are invited for one post of Lecturer in the Department of Education, Champhai College Champhai, Mizoram, in the pay scale of Rs. 700-40-1300/- plus other allowances admissible under Government rules, and the total emoluments at the initial stage is Rs. 1923.50. Apply stating full particulars supported by attested copies of Mark Sheets and Certificates from Matriculation onwards to reach the undersigned not later than **31st May 1985.** Each application must be accompanied by an application fee of Rs. 20/- in the form of Indian Postal Order or Bank Draft payable to the Principal, Champhai College, Champhai, and also a recent passport size photo.

L.F. Sailo
RINCIPAL

INDIAN INSTITUTE OF TECHNOLOGY

KANPUR-208016

Notice for Admission to M. Tech. & Ph.D. in July 1985

Admission of students will be made for the session 1985-86 commencing on 23rd July 1985 in the following Post-Graduate Programmes at IIT Kanpur. More detailed information is given in the Information Brochure which will be sent alongwith the Application form. This is in addition to our earlier advertisement regarding Ph.D. and M.Sc. admissions.

DOCTOR OF PHILOSOPHY (Ph.D.)

Programmes are available in the following disciplines.

***Chemistry**
***Mathematics Statistics**
***Physics**
***Economics**
***English**
***Philosophy**

Minimum Qualifications

A high second Class Master's degree or equivalent in the respective or allied areas.

Scholarship

Rupees 1000.00 per month to all the selected candidates with an enhancement of Rs. 200/- per month after two years of satisfactory performance.

The scholarship can be given to only those candidates who have a valid GATE/CERA score.

The Common Examination for Research Admissions (CERA) is scheduled on 25 June 1985. Write to Chairman GATE, IIT Kanpur-208016 for further information.

GENERAL INFORMATION

1. More information about the areas of study and the eligibility of candidates with different backgrounds will be supplied with the application form.

2.(a) A selected number of candidates for each of the programmes will be called for test/interview at IIT Kanpur.

(b) The candidates called for Ph.D. programmes will be paid to and fro second class railway fare.

3. Fifteen percent of the seats are reserved for **Scheduled Caste** and 7.5% for **Scheduled Tribe** candidates and they can apply irrespective of their Class/Division in their qualifying examination.

4. Ph.D. students are required to assist in the teaching/departmental work to the extent of six hours per week.

5. Admission of external candidates, sponsored candidates and part-time candidates are also available in Ph.D. programme. However, they are not eligible for Institute Scholarship. Details are available on request.

HOW TO APPLY

1. Candidates who possess the qualifications outlined above (including those who are appearing/have appeared/will be completing their qualifying examination not later than JULY 1985) may send a requisition for application on plain paper.

2. Application forms together with detailed instructions including eligibility conditions etc. for admission to each programme can be had either personally from the Office of Academic Section or through post by sending request alongwith a self-addressed stamped envelope (Rs. 2.50) of the size 28cm x 13cm to the Assistant Registrar (Academic) Indian Institute of Technology, Kanpur-208016, the intended programme duly superscribed on the envelope.

3. Those who wish to apply for admission to more than one programme should send separate envelope with necessary postage stamps.

The candidates should fill up the application forms carefully following the directions given in the application form/information brochure.

Incomplete applications without the required information/enclosures will not be considered.

Last date for the receipt of completed Application Form 10 June, 1985

MASTER OF TECHNOLOGY (M.Tech.)

Programmes are available in the following disciplines.

***Aeronautical Engineering**
***Chemical Engineering**
***Civil Engineering**
***Computer Science & Engineering**
***Electrical Engineering (including Electronics)**
***Mechanical Engineering**
***Metallurgical Engineering**
***Industrial & Management Engineering**
***Materials Science**
***Nuclear Engineering & Technology**

The admissions to the M.Tech. programmes in Indian Institutes of Technology are being coordinated this year through a Joint Advertisement which is appearing separately. The procedure for obtaining the application form and sending it back after completion is given in the joint advertisement.

Any candidate interested in one or more Programmes of IIT Kanpur is required to separately furnish the following particulars on **Plain Paper** to the **Assistant Registrar (Academic), I.I.T. Kanpur-208016.**

1. Name :
2. Mailing Address :
3. GATE Information
   Registration Number :
   Year :
   Valid GATE Score :
4. Programmes at I.I.T. Kanpur in which the candidate is interested in (listed in order of preference).

A selected number of candidates for each of the Programmes will be called for Counselling/Interview at IIT Kanpur. These candidates will be paid to and fro second class railway fare. Admission will be based on the GATE Score/Marks obtained in Qualifying Examination choice sheet filled by the candidate, and/or interview. **The interviews are likely to be conducted during 15-18 June 1985.**

Candidates admitted to M.Tech. Programme, if found suitable can be allowed to change over to Ph.D. Programme after one semester.

Admission to M.Tech. Programme is also available to sponsored candidates Full time or Part-time. Details are available on request from Assistant Registrar (Academic) I.I.T. Kanpur-208016.

OFFICE OF THE PRINCIPAL

MOUNT TIYI COLLEGE

WOKHA (NAGALAND)

ADVERTISEMENT

Applications are invited for the post of one lecturer each in the Department of English and Political Science in the U.G.C. Scale of Pay of Rs. 700-1600 plus such other allowances as per decision of the Governing Body from time to time. The total emoluments at the initial stage will be Rs. 1193.50/-. Candidates having minimum qualification of M.A. 2nd class (B+) in their respective subject will be eligible to apply in plain paper. Preference will be given to the candidates having M.Phil degree. Application alongwith attested copies of Certificate and Mark Sheets beginning from HSLC onwards should reach the office of the undersigned on or before **31st May '85**. The date of interview is fixed to be held on 5th June '85 at 10 A.M. in the Office-chamber of the Deputy Commissioner, Wokha. No interview card will be despatched, as such, the intending candidates applied for the said posts may follow suit for the interview. No T.A. and D.A. will be permissible from the College side.

K.C. Murry
PRINCIPAL

The Department of Chemistry of the University of Jodhpur has been selected by the University Grants Commission for implementing its COSIST Programme in which facilities have been provided for raising the standard of post-graduate teaching and research to international level. Consequently a new M.Sc. teaching programme has been started in the Chemistry Department w.e.f. July 1985.

Applications are invited for admission to a 2-year M.Sc. Chemistry course, from candidates who have passed B.Sc. with Chemistry as a major subject, securing atleast 54% marks of the aggregate. The admission will be on an all India basis and presently 32 candidates will be admitted. The admission form and prospectus can be obtained from the Head, Chemistry Department, Faculty of Science on a payment of Rs. 15/- by cash; those who desire the form by post should send a crossed demand draft for Rs. 15/- in favour of University of Jodhpur, payable at Jodhpur and postage stamps of Rs 5.55. No other form of remittance will be accepted. The last date of receiving the completed application form is 1st July 1985 and the forms will be available for sale from 25th May, 1985.

HEAD
DEPARTMENT OF CHEMISTRY
UNIVERSITY OF JODHPUR
JODHPUR-342001
(RAJASTHAN)

CLASSIFIED ADVERTISEMENTS

ANNAMALAI UNIVERSITY
ANNAMALAINAGAR

Dated : 3rd May 1985

Applications are invited in the prescribed form for filling up of the following posts. Application forms can be had from the undersigned on payment of Rs. 10/- each (not refundable) by cash/by money order/by postal order. Applications (with 5 additional copies) should reach the undersigned on or before **24-5-1985.**

Sl. No.	Name of the post	No. of post.
1.	Instrumentation Engineer	One

Qualifications

M.Sc. (Tech.) in Instrumentation or D.M.I.T. instrument Technology or M.I.T. Madras or equivalent qualifications.

B.Sc. Physics candidates with Engineering Degree in the subject will be preferred.

Versatile in Electronics circuitary, design and fabrication of Electronics instruments, familiarised in repairing, handling and operating infra-red spectra photometer, UV & N.M.R. Spectrometers. Those who have obtained Ph.D. degree in any of the above fields and who are familiar with techniques of above instruments may also apply. Preference will be given to those who have already got sufficient experience in Central Instrumention Laboratories.

OR

A B.E. in Electronics Engineering with specialisation in communication or Instrumentation or Computers.

OR

M.Sc. (Applied Physics in Electronics).

Scale of Pay

Rs. 1200-50-1300-60-1900 with usual allowances.

Single Second Class to and fro Railway fare will be given to candidates called for interview for the post of Instrumentation Engineer.

AR. Lakshmanan
REGISTRAR

SHREEMATI NATHIBAI DAMODAR THACKERSEY WOMEN'S UNIVERSITY
BOMBAY-400020

ADDENDUM

Reference our advertisement which appeared in May, 1985 issue of the journal for the post of Principal. Kindly read the revised qualifications as follows:

(a) Doctor's Degree or research work of an equally high standard in one **of the subjects under Arts/Social Sciences/** Commerce.

(b) A consistently good academic record at the Master's level with at least first or high second class or equivalent degree of a foreign University, **in a subject under Arts/Social Sciences/ Commerce.**

Other things remain the same.

Smt. K.H. Bhansali
REGISTRAR

Indian school of Mines

DHANBAD-826004

No. 420002/85-Estt/3 **Dated : April 26, 1985**

The Indian School of Mines, deemed to be a University under the UGC Act, invites applications for recruitment to seven posts of Professors, fourteen posts of Asstt Professors and twelve posts of Lecturers, as follows:

Centre/Department	Post		Specialisation/Background
(A) Centre of Mineral Resources	Asstt Prof	One	Mineral Economics (The post could be filled at the level of Lecturer if no suitable candidate for AP is available)
(B) Applied Geology	Professor	One	Mining Geology/Ore Geology/ Exploration Geology
	Asstt Prof	One	Photogeology/Remote Sensing
(C) Applied Geophysics	Lecturer	Two	Marine Geophysics/Electrical Methods/Geophysical Data Processing/Gravity Magnetic Methods
(D) Applied Science	Asstt Prof	Three	(a) Computer Science (b) Physics (c) Chemistry
	Lecturer	Three	(a) Ceramics/Analytical Chemistry/Organic Chemistry (b) Nuclear Physics (specialisation in carbon dating) (c) X-Ray/Solid State Physics
(E) Electronics & Instrumentation	Lecturer	Two	(a) Telecommunication/Instrumentation/Micro-Processors (b) Longwall Mining Electronics and Instrumentation
(F) Engineering & Mining Machinery	Professor	One	Mineral Processing' Equipment
	Asstt Prof	Two	(a) Opencast Mining Machinery (b) Mineral Processing Equipment
	Lecturer	One	Drilling Engineering
(G) Fuel & Mineral Engg	Professor	Two	(a) Mineral Engg (b) Fuel Engg
(H) Industrial Engg & Management	Professor	One	Management with specialisation in one or more out of (a) General Mgmt/Financial Mgmt/ OD & OB

Centre/Department	Post		Specialisation/Background
	Lecturer	Two	(a) Industrial Engg (b) Economics with specialisation in Econometrics.
(I) Mining Engineering	Professor	One	Coal Mechanics and Excavation Engineering
	Visiting Asstt Prof	One	Coal Mechanics and Excavation Engineering
	Asstt Prof	Four	(a) Mine Environment (b) Coal Mining (c) Opencast Mine Systems (d) Rock Mechanics
	Lecturer	One	Mine Surveying (lien vacancy likely to become permanent).
(J) Pet Engg	Professor	One	Pet Engg (with background in any engineering discipline)
	Asstt Prof	Two	Pet Engg (including one with Mech Engg background)
	Lecturer	One (Likely)	Pet Engg specialisation with Mech/Chem background also.

PAY & ALLOWANCES AND AGE LIMIT

Post	Upper age limit	Scale of pay (Rs.)	Salary (Rs.) at	
			Min. of pay scale	Max. of pay scale
Professor	50 years	1500-2500	2840.00	4650.00
Asstt Professor	40 years	1200-1900	2540.00	3538.00
Lecturer	35 years	700-1600	1728.50	3000.00

Qualifications

(A) Professor

An eminent scholar with published work of high quality actively engaged in research with ten years experience of teaching and/or research of which five years should have been as Assistant Professor or in a position of equivalent responsibility. Experience of guiding research at Doctoral level.

OR

An outstanding Scholar/**Engineer/Technologist** with established reputation who has made significant contribution to knowledge/engineering practice.

(B) Assistant Professor

(a) Good academic record with a Doctorate Degree in relevant field provided that candidates not possessing Ph.D. may be considered if they have to their credit suitable published or design/development work in an institution or in an industry of repute.

(b) About five year's experience of teaching and/or research and development of which three years should have been as Lecturer or in a position of equivalent responsibility.

(c) Evidence of having been actively engaged in (i) research or (ii) innovation of teaching methods, or (iii) production or teaching material.

OR

In the case of posts in **engineering subjects,** candidates from the industry or professional fields should possess good academic record with recognised professional work of about seven years.

(C) Lecturer (in Engineering disciplines) :

(a) Master's degree in appropriate field.

(b) Consistently good academic record with a bachelor's degree in Engineering/Technology. First class at Bachelor's and/or Master's level.

(c) One year's relevant professional experience outside academic/research Institutions.

Provided that having regard to the requirements of emerging fields and of developing inter-disciplinary programmes, the requirement of Engineering/Technology degree may be waived in the cases of candidates otherwise well qualified.

Provided further that if a candidate who does not possess one year professional experience aforesaid or the Master's degree is appointed as a Lecturer, he shall be required to obtain the desired professional experience/Master's degree within a period of five years of his appointment, failing which he shall not earn future increments until he has fulfilled the said requirement(s).

Lecturer (Science/Applied Science subjects)

(a) A doctorate degree or research work of equally high standard.

(b) Consistently good academic record with 1st or high 2nd class (B on the seven point scale). Master's or equivalent degree in relevant subject.

Having regard to the need for developing inter-disciplinary programmes, the degrees in (a) and (b) above may be in subjects of relevance.

Provided that if the selection committee is of the view that the research work of a candidate (as evident either from his thesis or from his published work) is of very high standard it may relax any of qualifications prescribed in (b) above.

Provided further that if a candidate possessing a Doctorate degree or equivalent research work is not available or is not considered suitable, a person possessing a consistently good academic record (suitable weightage being given to M Phil or equivalent degree or research work of quality) may be appointed provided he has done research work for atleast two years or has practical experience in a research laboratory/organisation, on the condition that he will have to obtain a Doctorate degree or give evidence of research work of equivalent high standard within five years of his appointment, failing which he shall not earn future increment until he fulfils the said requirements.

A higher start in the scale may be given in special and deserving cases. Upper age limit relaxable in respect of candidates otherwise considered suitable.

Detailed information and prescribed Application Form may be had free-of-charge from Registrar, Indian School of Mines, Dhanbad-826004, by sending a self-addressed envelope (of size 30cm×12cm) duly affixed with stamps worth Rs. 4.05.

Application in the prescribed form complete in all respects should reach the undersigned on or before **10th June 1985.**

S.P. Varma
REGISTRAR

BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE
PILANI (RAJASTHAN) 333031

Faculty Recruitment Advertisement No. FR/1/85

Dated : April, 1985

Applications are invited for faculty positions at various levels (Professors, Associate Professors, Assistant Professors, Lecturers, Assistant Lecturers and Teaching Assistants). Appointments are proposed to be made at all levels in all the disciplines for which the Institute awards degrees at the first degree level namely, chemical, civil, electrical & electronics and mechanical engineering; computer science, instrumentation, pharmacy, management; biosciences, chemistry, economics, mathematics, physics; science & technology development, museum studies, engineering technology and english.

While all the necessary details are available in the free booklet entitled "Introducing BITS to Prospective Faculty, 1985" which can be obtained by any candidate who is interested, this advertisement touches only the highlights.

To get the booklet (weighing 100 gms), please write to the undersigned marking your request 'FR/1 85' enclosing a stamped self-addressed envelope (stamps worth Rs. 2.50) of size 30×25cms. For material to be sent outside India by Air Mail, International Postal Coupons will be accepted, worth Rs. 18/- for U.S.A.

Minimum qualifications required are: for Teaching Assistant—atleast first class degree of BITS in the appropriate discipline like B.E., M.Sc., etc., or its equivalent; for Assistant Lecturer-a degree higher than the first degree of BITS like M.E., M. Phil., etc., or its equivalent; for Lecturer and above—normally a Ph.D. degree, however persons with unusual experience or potential for growth, who may not possess Ph.D. can also be considered. Due consideration will be given to Scheduled Caste and Scheduled Tribe candidates.

All posts carry UGC salary scales. Dearness Allowance is about 50% of the basic salary. A higher starting salary in the grade can be given to candidates commensurate with their qualifications, experience, exceptional competence etc.

Service benefits include C.P.F. & Pension, housing on nominal rent, opportunity to work for higher degree, tuition fee waiver for self, spouse and children in the Institute and local schools.

In addition to normal duties of teaching, research and co-curricular activities, the Institute demands from its faculty a capacity and willingness to face the challenges of teaching and preparation of teaching material in related disciplines and interdisciplinary courses, a flair for participation in developmental and growth processes of the Institute, and involvement in team-work towards innovation and modernisation. All faculty members will be required, whenever assigned, to take up duties in off-campus centres where practice school and similar types of programmes are in operation. Special preference will be given to persons who have the best fit against the above requirements & who have or are willing to acquire competence in computer, modern analytical instrument techniques etc.

This advertisement is valid for one year from the date of issue. The Institute will review more than once all cases that accumulate during this period.

A.N. Bhargava
REGISTRAR

TECHNOLOGICAL INSTITUTE OF TEXTILES
BHIWANI-125022 (HARYANA)

ADMISSION NOTIFICATION FOR 1985

The Institute prepares students for the following examination of Maharshi Dayanand University:

Courses	*Duration*	*Intake*	*Last date for receiving completed Applications*
Bachelor of Textiles	4 Years	80	27 May 1985
Master of Textiles	1½ Years	20	15 June 1985

Important : No extension is permissible in the above dates.

Minimum Qualifications

B. Text. (Textile Technology/Chemistry)

Pre-Engg. of M.D. University (or equivalent examination) with atleast 50% marks in the aggregate of Physics, Chemistry and Mathematics OR B.Sc. of M.D. University (or equivalent examination) with atleast 50% marks in the aggregate of Physics, Chemistry and Mathematics and having passed in English (optional or qualifying).

M. Text. (Technology/Chemistry)

Candidates seeking admission to M. Text. Course should have:

(i) qualified in GATE.
(ii) passed B. Text. degree from M.D. University or from any other recognised University with atleast 50% marks

Criteria for Selection

Admission to open seats would be through an Entrance Examination to be conducted by M.D. University at Rohtak on **June 18 and 19, 1985.** Candidates appearing in Pre-Engg. (or equivalent examination (in April/May can also appear in the Entrance Test.)

There are no restrictions with regard to age or domicile.

In accordance with the Merit List of GATE. Ten scholarships of the value of Rs. 1000/- p.m. each awarded by the Govt. of India are available for the students qualifying in GATE.

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The Institute's Prospectus for the above Courses and the Prospectus for B Text. Entrance Examination can be had by Registered Post from the Director, Technological Institute of Textiles, Bhiwani by sending Rs. 20/- by Money Order. The M.O. Coupon should clearly indicate whether the Prospectus is required for B. Text. or M.Text.

R.C.D. Kaushik
DIRECTOR

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Indian school of Mines

DHANBAD-826004

Advt. No. 420011/85-Estt/2 Dated : **April 26, 1985.**

Indian School of Mines, deemed to be a University under the UGC Act, invites applications for the following posts:

1. **System Manager :** One Post.

Job Description

The School has placed orders for a VAX-11/780 system which is expected to become operative in early 1986. The system shall be used both for research and instructional purposes; one of its terminals is expected to be located in a national research laboratory situated about two kms. away. The System Manager shall get the system installed and manage it. The School has operated 4 micro-computers for the past 8-9 years, and regularly purchases computer time in RCC/Jadvapur. It has placed orders for some more micro-mini-computers.

Qualifications

Ph.D. in Computer Science/Technology, experience in hardware/software and computation with large computer system.

2. **Librarian :** One Post.

Job Description

The Librarian shall be responsible for the management of the Library and Information Services of the School. The ISM library has nearly 55,000 volumes (including over 15,000 volumes of back journals) and gets more than 500 periodicals. It has excellent Xeroxing and micro-filming/printing facilities.

Qualifications

(a) First or second class MLibSc. (OR) MA/MSc/MCom plus a First or Second class BLibSc or Diploma in Library Science (Essential).

(b) At least seven years experience as Librarian or Deputy Librarian (or equivalent responsible professional capacity) in a university library (Essential).

(c) PhD degree or equivalent research work in the field relevant to the profession.

(d) Preference would be give to candidates with training and experience in computerization/information technology.

3. **System Engineer :** One Post.

Job Description

To maintain the ISM Computer System.

Qualifications

Master's degree in computer science, with specialization in software engineering, with good relevant experience.

4. **Sports Officer :** One Post.

Job Description

The School has a residential Campus with over 700 students and scholars on its rolls. Participation in games/sports (or NSS/NCC/Yoga) is compulsory for under-graduate students. The Sports Officer is responsible for the conduct and management of games and sports activities of the School (including coaching) and of related infrastructure.

Qualifications

(a) A Master's degree in Physical Education (High Second Class) with Diploma in Sports Coaching from a recognised institution (OR) A Master's degree in Physical Education (High Second Class) with a record of having represented his University at the Inter-University level or his State at the National Championship.

(b) Experience in organising games and sports (as exemplified by the handling of atleast half a dozen teams in his institution and their participation in University/Inter-Collegiate tournaments) and ability to manage/mass participation in games and sports.

5. **Programmer :** One Post.

Job Description

To develop and assist in running of programmes on the computer system.

Qualifications

Master's/Bachelor's degree in software engineering and/or Master's degree in the application area with competency in programming. Proficiency in more than one computer languages.

6. **Senior Technician (for Deptt of Pet Engg) :** One Post.

Qualifications

MSc in Chemistry/Physics with two years research or testing experience (OR) BSc in Chemistry/Physics with minimum of 50% marks in the qualifying examination and four years experience in a research Laboratory.

7. **Senior Technical Asstt (Mine Surveying) (for Deptt of Mining Engineering) :** One post.

Qualifications

Mine Surveyor's Certificate of Competency with five years experience in Mine Surveying (OR) Advance Diploma in Mine Surveying, with (in both cases, working knowledge of handling modern surveying and mine surveying instruments.

8. **Senior Library Asstt (Reprography) (for Central Library) :** One Post.

Qualifications

Diploma in photography from a recognised institution with three years experience of photographic and reprographic work in a reprographic unit of standing (OR) Graduate with five years experience of photographic and reprographic work in a unit of standing.

9. **Coach (Athletics) :** One Post.

Qualifications

(a) Graduate in Physical Education (OR) Participation in National International sports with NIS Coaching Certificate.

(b) Two years experience in coaching athletics.

10. **Library, Asstt (For Central Library)** One Post.

Qualifications

A good Bachelor's degree with a degree or diploma in Library Science preferably with 60% marks or above, and with good knowledge of UDC and AACR. One year experience in a library of standing.

Pay and Allowances and Age Limit

Sl. No.	Post	Upper age limit years	Scale of pay (Rs.)	Approx. Salary at Min. of Scale (Rs.)	Approx. Salary at Max. of Scale (Rs.)
1.	System Manager	45	1500-2000	2840.00	3720.00
2.	Librarian	45	1200-1900	2540.00	3538.00
3.	System Engineer	35	1100-1600	2410.00	2920.00
4.	Sports Officer	35	700-1600	1728.50	2640.00
5.	Programmer	35	700-1300	1728.50	2640.00
6.	Senior Technician	35	650-1200	1600-80	2540.00
7.	& 8. Sr. Lib/Tech. Asstt	30	550-900	1365.30	2177.00
9.	Coach (Athletics)	30	500-900	1278.50	2177.00
10.	Library	30	425- 700	1171.70	1728.50

A higher start in the scale may be given in special and deserving cases. Upper age limit and type of experience requirement relaxable in respect of candidates otherwise considered suitable.

Detailed information and prescribed application Form may be had free of charge from Dy Registrar (G), Indian School of Mines Dhanbad-826004, by sending a self-addressed envelope (of size 30cm x 12cm) duly affixed with stamps worth Rs. 4.05.

Application in the prescribed form complete in all respects should reach the undersigned on or before **24th June, 1985.**

S.P. Varma
REGISTRAR

SHREEMATI NATHIBAI DAMODAR THACKERSEY WOMEN'S UNIVERSITY
BOMBAY-400020

Shreemati Nathibai Damodar Thackersey Women's University, 1, Nathibai Thackersey Road, Bombay-400020, invites applications before **May 31, 1985** in the prescribed forms (8 copies) available at the University Office, on payment of Rs. 5/- in cash or by Indian Postal Order, for the following posts to be filled in at the Department of Correspondence Course, of the University at Bombay on a tenure, for about two years:

Posts	*No. of Posts*
1. Deputy Director (in the scale of Reader)	ONE
2. Assistant Directors (in the scale of Lecturer)	
(a) Language (English/Marathi/ Gujarati)	ONE
(b) Social Sciences (Soc./Eco./ His./Politics)	ONE
(c) Commerce	ONE

Minimum qualifications, salary scales, etc. for the posts are as per approved U.G.C. scales and qualifications. Details available with application forms, which should be collected. Applications of Scheduled Castes/ Tribes/other nomadic tribes, etc. will be considered as per Government directives. Knowledge of Marathi/ Gujarati essential besides fluency in English.

Smt. K.H. Bhansali
REGISTRAR

NEW ARRIVALS DECEMBER 1984

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2	Report of the Backward Classes Commission. First Part Vol I & II 1980. (Print 1984). PHD 339 (Rep)(E)	34.50
3.	Customs Tariff Working Schedule (Fifth issue) 1 9.1984 (Print 1984). PDSI.2.84.	80.00
4	प्रबोध पाठमाला (प्रिन्ट 1984)PDOL 23(N)	रु 2.70
5.	प्राज्ञ पाठमाला (कायांलयीन हिन्दी) (प्रिन्ट 1984). PDOL. 24	रु 6.60
6	प्राज्ञ अभ्यास पुस्तिका (कार्यालयीन हिन्दी) (प्रिन्ट 1984). PDOL. 22(N)	3.80
7	The Indian Medical Council Act, 1956 (As modified up to the 1st September, 1983) (Part I). (Print 1984). Act 102 of 1956	10.00
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INDIAN INSTITUTE OF SCIENCE

BANGALORE-560012

Advertisement No. R(IA) 308-17/85

Dated : 6th May, 1985

Applications in the prescribed form are invited for the post of Lecturer in the area of Synthetic Organic Chemistry in the Department of Organic Chemistry at the Institute in the grade of Rs. 700-40-1100-50-1600 plus allowances admissible at the Central Government rates prevailing at the Institute from time to time. Emoluments at the minimum of scale total to Rs. 1,927.95 per month (including House Rent Allowance).

Qualification and Experience

Essential

Ph.D. degree in Organic Chemistry with specialisation in Synthetic Organic Chemistry.

Desirable

Research experience in organic synthesis evidenced by publications in reputed journals.

Job Description

The Department of Organic Chemistry admits scholars for research in various branches of organic chemistry leading to the Ph.D. degree of the Institute. The incumbent is responsible to generate competent research ideas fructifying in the production of research theses and publication of outstanding merit and train and guide research scholars to this end. He will also be responsible towards contributing to the general planning and execution of the various academic activities of the Department.

Relaxation

The stipulation regarding the number of years of experience is relaxable at the discretion of the competent authority in the case of candidates possessing exceptionally good record and outstanding capabilities.

Tenure of Appointment

Normally, all new appointments at the Institute are made on contract for periods of five years including an initial probationary period of one year. If, at the end of the first contract, the work and progress of the candidate is found satisfactory, the Institute may consider offering a continuing appointment till the age of superannuation, i.e. 60 years.

General

Application forms (six copies) can be obtained from the Registrar, Indian Institute of Science, Bangalore-560012, on requisition. Each request for application forms should be accompanied by a crossed Indian Postal Order for Rs. 5/- (non-refundable) made payable to the Registrar, together with a self-addressed stamped (Rs. 3.30) envelope of the size of 28×18cms. The payment of application fee is exempted in the case of candidates belonging to Scheduled Castes/Scheduled Tribes on production of certificate from a competent authority.

The last dates are :

(a) For issue of application forms : **5.6.1985**

(b) For receipt of completed application forms : **21.6.1985**

Applicants in the service of Government, quasi-Government, Government aided or similar institutions should apply through proper channel. Otherwise, their applications will not be considered.

It shall be open to the Selection Committee for higher post to recommend a person for a lower post if a suitable candidate for the higher post is not available.

Due consideration will be given to candidates who are physically handicapped provided they are academically/scientifically sound and well qualified and generally comparable to others.

Higher starting salary may be considered to candidates with exceptional merit.

Kindly quote the advertisement No. and Date in all correspondence. Candidates should ensure that applications are complete in all respects.

Detailed terms and conditions of appointment will be supplied alongwith the application forms.

REGISTRAR

INDIAN INSTITUTE OF SCIENCE

BANGALORE-560012

Advertisement No. R(IA)308-18/85

Dated : 7th May, 1985

Applications in the prescribed form are invited for the posts of Assistant Professor (2 posts under UGC Special Assistance Programme and 2 posts under Block) in the Department of Electrical Engineering at the Institute, in the grade Rs. 1200-50-1300-60-1900 plus allowances admissible at the Central Government rates prevailing at the Institute from time to time. Emoluments at the minimum of the scale total to Rs. 2774.75 including House Rent Allowance.

Qualifications and Experience

Essential

Doctorate degree in the broad discipline of Electrical Engineering with two years' post-doctoral experience and specialisation in the fields of Systems Science or Signal Processing. Preference will be given to candidates working in computer oriented areas such as Artificial Intelligence, Adaptive and Learning Systems, Pattern Recognition, Biosignal Processing and Image Processing, besides expertise in hardware involving microcomputers.

Desirable

Publications in reputed professional journals.

Job Description

The Selected candidates should be capable of doing independent research and of guiding students towards Ph.D. degree. They will also be required to get involved in undergraduate and graduate teaching, and also in the programmes of the Department.

Relaxation

The stipulation regarding the number of years experience is relaxable at the discretion of competent authority in the case of candidates possessing exceptional good record and outstanding capabilities.

Tenure of Appointment

Normally, all new appointments at the Institute are made on contract for periods of five years including an initial probationary period of one year. If, at the end of the first contract, the work and progress of the candidate is found satisfactory, the Institute may consider offering a continuing appointment till the age of superannuation, i.e. 60 years.

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UNIVERSITY NEWS

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Editor :

M. S. RAMAMURTHY

Bombay Varsity Workshop on Methodological Foundation for Education in India

To reappraise the philosophical underpinnings of Indian education, the Bombay University's Department of Economics, organised, under its University Leadership Programme, a 3-day workshop on "The Methodological Foundation for Education in India" from March 25 to 27, 1985.

The main focus of the Workshop revolved around certain epistemological problems through a new methodological apparatus called 'The Structural Method', developed by Professor Ranganath Bharadwaj. Through this Workshop, an attempt was made to understand the multi-directional potentiality and applicability of the method, and provide some clues towards using the proposed method in response to changing conditions. 'The Structural View' emphasises on the phenomenon being structures and not unidimensional entities.

Fifteen participants from 12 different disciplines, including Economics, actively participated in the deliberations of the workshop and discussed the technical papers (19 in all) specially prepared.

Dr. M.S. Gore, Vice-Chancellor, University of Bombay, while inaugurating the workshop on March 25, 1985, deliberated on the need to discard the old concept and methods of education where teachers acted more like "conveyor belts" of knowledge and students were mere recipients. Under the present educational system, students did not respond, and the feed-back was poor. He emphasised that education was basically an interactive process where teachers and students exchange ideas on the relevant issues. Therefore teaching has to be basically related to life-experiences in totality. The present-day problems of education needed urgent solutions. He expressed his happiness over the workshop which is an important step towards seeking such a solution.

Professor P.R. Brahmananda, Director of the University, Department of Economics, in his welcome speech, emphasised the innovative nature of the new method and stated that experiments along this view should continue with wider coverage of participants and areas.

Professor Ranganath Bharadwaj, Professor of Econometrics and Professor-in-Charge of the ULP, said that the workshop was essentially concerned with questions relating to the General theory of models or frames of Analysis. The workshop seeked to question the established models which seek to analyse the reality. The models were common to all social sciences and hence examining their philosophical foundation become relevant.

The motive force of this kind of workshop comes from the urgent issues like education which are relevant to the well-being of the coummunity. Hence, far from being abstract, the methodological foundations for education in India are important in understanding the real issues. He cited how optimism during the sixties about education as an engine of economic growth gave way to cynicism during the seventies.

The participants, in their own assessment of the workshop felt that the new structural method, developed by Professor Ranganath Bharadwaj, had great potentialities in resolving problems of sciences and societies, and as such deserved all support. Research and training along these lines should be encouraged and strengthened. The participants also felt that a wider audience should be exposed to this new method. ☐

UNIVERSITY OF HYDERABAD

HYDERABAD-500134

ADMISSION NOTICE 1985-86

Applications in the prescribed form are invited for admission to the following full time courses for the academic session 1985-86 (JULY).

1. M.Sc. courses in Mathematics, Physics, Chemistry and Life Sciences (Bio-chemistry; Plant Sciences and Animal Sciences)
   Duration. 2 years (4 semesters)
2. M.A. courses in English, Hindi, Telugu, Urdu, Philosophy, Economics, History, Political Science and Sociology.
   Duration : 2 years (4 semesters)
3. Master of Computer Applications (M.C.A.)
   Duration : 3 years (6 semesters)
4. Diploma in Computer Applications (D.C.A.)
   2 semester post-graduate course.
5. M.Phil. courses in Mathematics, Physics, Chemistry, Life Sciences, Physics (Material Science), Physics (Modern Optics/Laser Physics) English, Hindi, Telugu, Urdu, Philosophy, Economics, History, Political Science and Sociology/Anthropology.
   Duration : One year (2 semesters)
6. M.Tech. in Computer Science (Three semester course)
7. Ph.D. in Mathematics, Physics, Chemistry, Life Sciences, Computer Sciences, English, Hindi, Urdu, Philosophy, Economics, Political Science, Sociology and Anthropology.
8. B.Tech. in Computer Science and Engineering
   Duration : 3 years (6 semesters).

The eligibility requirements and other details for each course/subject are given in the Admission Bulletin which may be obtained alongwith the application form from the Deputy Registrar (Academic), University of Hyderabad, Central University P.O., Hyderabad-500 134, either in person on payment of Rs. 5/- for one set of form and one copy of the Bulletin or by post sending a crossed Demand Draft for Rs. 7/- payable to the Finance Officer, University of Hyderabad, drawn on the State Bank of India, Hyderabad University Campus Branch or Andhra Bank, Nampally Branch, Hyderabad, or any other Nationalised Bank in Hyderabad. Each additional application form will cost Rs. 2/-. **Separate applications are required for each course.** However, for M.Sc. Life Sciences courses and for M.C.A. & D.C.A. courses one application each will be sufficient. Requests for supply of Admission Bulletin and Application Forms by post should accompany two self-addressed slips with PIN code. Local sale of application forms/admission bulletins at the University Offices located in the Golden Threshold, Nampally Station Road, Hyderabad-500001, and the University Campus, shall commence from 25th May, 1985. REQUESTS FOR SUPPLY OF APPLICATION FORMS BY POST SHOULD REACH THIS OFFICE ON OR BEFORE 5TH JUNE 1985.

15% of seats in each course are reserved for Scheduled Caste candidates and 7½% for Scheduled Tribe candidates, with provision of inter-changeability, wherever necessary. Relaxation of 5% marks in the minimum eligibility requirement will be given to them. If seats reserved remain unfilled, further relaxation may also be given. 3% of seats in each course are reserved for physically handicapped candidates.

Admission is made in order of merit taking into consideration the past academic record of the candidates and their performance in a written test and/or oral test. Admission tests are scheduled to be held between 16th and 22nd July, 1985 at Hyderabad. Candidates appearing for the admission tests may be paid second class rail fare (both ways) by shortest route, only for the distance beyond 300 kms. (each way) on production of evidence of the journey performed, while the fare for the first 300 kms. each way is to be borne by candidates themselves.

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Dr. K.C. Reddy
REGISTRAR

Strategic vocational courses to achieve the objectives of delinking of degrees from jobs

D. K. Ghosh*

Recent pronouncement by our Prime Minister for delinking of degrees from jobs will, when implemented, have far reaching effects towards a number of bigger and deeper objectives and they could be the following :

(i) to make selective admission to higher education and thereby make available the existing limited facilities in a better and effective manner to the deserving ones which will help raise the standards of education and research; (ii) with deserving and serious students in higher education, it will be possible to create a better educational climate; (iii) to train a larger number of students at the +2 (for some particular branches, of 3 year duration) courses in different vocations so that the absorbing units get trained personnel; (iv) with trained personnel in different vocations, productivity will help boost economy of the country.

This paper will discuss the relevant aspects of delinking and make concrete suggestions :

(i) areas where degrees can be delinked from jobs; (ii) how best the +2 courses, particularly vocational courses should be identified and organised; (iii) how best to establish streamlined channel to provide employment avenues to majority of the successful students of vocational streams and the **modus-operandi** thereof; (iv) what opportunities should remain open to the students who are found promising in their performance at the vocational courses and/or have aptitude for higher education in the particular branch.

Why large number of unwanted degree holders?

In this context, an analysis of the factors responsible for the unprecedented rise in higher education enrolment which has created a situation of a large number of unwanted degree holders and which has led to an alarming rise in the educated unemployment, is called for. The steep rise in enrolment in the post-independence period has created not only the problem of educated unemployment, but as the bulk is not fit for higher education, that has affected adversely the standards of teaching and research. This has also deprived, in a condition of limited resources and facilities, the deserving ones from the benefit of the existing facilities.

Precisely, this has created all round problems. The number rose from 2,65,917 in 1947-48 to 8,27,348 in 1957-58 and now it is over 3 million. Despite the fact that since 1947-48, the number of Universities and colleges also grew rapidly, but as the enrolment growth has been faster, the institutions were unable to provide suitable facilities and raise the standards. However, comparatively professional institutions performed better.

This unprecedented growth of enrolment in the post-independence period has been explained by Dr. Malcom Adiseshiah. He observed that "foremost was the response to the revolution of rising expectations which free India generated in all its sons and daughters. This was the tryst with destiny that millions has been eagerly awaiting and they incorporated that hope in the constitutional right to education. Second was the population bulge which independent India ushered in."

The third factor was '..the recognition that higher education bestows upon one prestige and place in the society. The fourth reason was linking of degrees with jobs. As a result of population bulge, keen competition and mass production of degree holders, preference naturally fell on those who hold higher degrees or another degree of specialised nature. This included mostly the non-technical jobs. Even where the basic qualifications were not degrees, degree holders were given preference and over the years, possession of degree became the minimum requirement whether prescribed as such or not.

Both in order to qualify for a job as also to stand in competition of paper qualifications, everybody rushed to colleges and universities. This makes it amply clear that it is basically due to a policy or practice of linking degrees with jobs or for preferring degrees that made people go in for degrees. Consequently, rise in education enrolment was witnessed.

(i) Areas of delinking degrees from jobs

Which areas should be included within the purview of 'delinking' may be a matter of debate and controversy. For example, while one section may advocate that even for the posts of officers, possession of degree should not be necessary, another section may oppose that on the ground that since officers have to provide leadership, knowledge gained in pursuing studies for a degree course should be necessary to qualify in a competitive examination. For example, analysing the results of IAS examination held by U.P.S.C. in a particular year, it was found that although B.A. is the qualifying examination for appearing at the I.A.S. examination, more post-graduates were selec-

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Registrar, Indira Kala Sangeet Vishwavidyalaya, Khairagarh.

ted than graduates as would be evident from the following figures.

Degrees held	No. of candidates selected for IAS
(1) B.A./B.Sc./B.Com.	31
(2) M.A./M.Sc./M.Com. including B.Tech./M.Tech.	246

These figures tell us clearly that knowledge of a higher degree is necessary for posts requiring leadership. Thus, for posts of this nature delinking of degrees cannot be considered at all.

In the absence of the areas where degrees are to be delinked from jobs being clearly specified as yet, there seems to a sense of uneasiness and speculation and it is, therefore, necessary to dwell upon this aspect for that will then help the other related issues to be sorted out better. For obvious reasons, neither it is practicable nor desirable to delink degrees from all jobs. This makes it necessary to specify the areas that do not require the 'knowledge' of a degree' but 'skill' of the particular branch. It would be fatal to delink degrees from the important positions, be it in science, technology or management. Functional skill is required for most of the jobs of general nature, but where leadership is necessary or where the job is too technical in nature, not only degrees but even research degrees should continue to be the requirements, depending however, mainly on the job requirements.

In order to make the decision of delinking degrees from jobs stable and objective, careful and gradual steps should be taken and begin with, delinking should be declared for the following areas :

(i) Clerical jobs in Banks, Government Offices including Railways, private and autonomous organisations; (ii) salesmanship, propagators and promoters in all organisations; (iii) posts in hotel management, tourism etc; (iv) Telephone Operators, Technicians, Inspectors of Income-tax, Sales Tax, Excise and in other departments; (v) such other posts which do not require the knowledge of a degree but skill of the particular branch of job.

Most of the jobs are low-paid and they belong to the above categories. However, depending on the organisation and nature of jobs, emoluments will vary. If delinking is done in the above areas, a large number can be diverted from the higher education channel. More posts of the above categories can be identified on the principle of the requirement of 'knowledge and leadership' and 'skill'.

+2 courses of general stream

According to the estimate of the Education Commission (1964-66), 40 percent students will enter working life at the end of ten years of school education and about 30 percent will join vocational courses. It is only the remaining 30 per cent that will continue further in the stream of general education. Thus, there will be two broad streams of education after the 10 years of school education.

In so far as the general stream of two years, before entering the degree level, is concerned, the Education Commission has positively recommended that this should be provided only in selected schools. It further recommended that "An essential requirement is that the institution should be large, centrally located and equitably distributed between the urban and the rural areas." With this end in view, the Commission suggested that "it would also be desirable to review the status of all existing higher secondary schools, and where these are too small and uneconomic or of very poor quality, they may be reconverted into high schools."

While the Education Commission "does not believe that it is necessary or desirable to impose a uniform pattern of school and college classes in all the parts of the country" because of ..the vastness of the country and the immense diversity of local conditions and traditions that demand a certain element of flexibility in the educational structure", it has categorically recommended the transfer of the 'pre-University' classes to the higher secondary schools on a priority basis. This will necessitate that the Universities which had introduced this course in the sixties as a transitional course when the 3-year degree course system was introduced, have to transfer that to the schools. While such transfer may not involve major problem, excepting means and methods to utilise the facilities which were so far engaged for pre-university classes, the real problem will arise in the case of the existing intermediate colleges. In the case of these colleges, after transferring the pre-university level classes to the higher secondary schools, either all these colleges are to be upgraded as degree colleges or alternatively, these intermediate colleges have to be degraded as higher secondary schools to provide +2 courses. Despite the central assistance, only five states had implemented the eleven classes of higher secondary system.

In order to accelerate the implementation of the new system, high schools and higher secondary schools should be identified and transfer of pre-university classes completed as the first step.

+2 Vocational Courses

Success of delinking degrees from jobs and the implementation of the +2 vocational courses as envisaged by the Education Commission (1964-66) will aepend on the incentives provided to join +2 vocational course, as also measures taken to ensure that a sizable percentage of the students successful at the +2 courses are absorbed in employment. Pre-requisites to these are the following :

(a) careful identification of the vocations for which +2 courses should be organised; (b) coordination with the employers through some agency e.g. Employment Exchange or a special cell in the state education department to assess the employment opportunities in different sectors in the next 2-3 years to decide the intake for different vocations; (c) legislation so that the different organisations and industries recruit their personnel in the vocations concerned from among those passing out the +2 courses.

In the first instance, it would be necessary to select those branches of vocations which would absorb maximum number of people both in employment as also in independent professions. With this end in view, the following branches could be selected :

(1) Secretarial practice including accountancy, book-keeping and other specialised areas for bank services; (2) Stenography and Typing; (3) Operators of different sophisticated machines and equipment eg. T.V., Video shooting, repairs of Refrigerators, Radio and Cassette Recorders; (4) Carpentry, Welding, etc.; (5) Agriculture and Horticulture; (6) Rural Banking system and procedure. (7) P imary Teachers Training; (8) Home Science; (9) System of Billing in the State Electricity Boards and maintenance of accounts.

With the main objective of diverting the student population after tenth class, there could be an alternative to the +2 vocational courses under which the vocational training of varying duration can be given by the employers following the initial recruitment after the tenth class. This will mean that the old Matric standard will be the qualifying examination for entry to lower jobs.

To establish streamlined channels for jobs for the vocational students

Crucial to the plan of diverting about 30 per cent students to the vocational courses, after class ten, is employment opportunities that will lay before them so that, while on one hand, they may get away from the present illusion of a degree, on the other hand, may feel confident of jobs after successful completion of vocational courses.

For obvious reasons, while providing jobs to all, is not possible, it is believed that it may not be difficult to provide jobs to a sizable number of those admitted to and successful at the vocational courses, if planning is done along the following lines :

(a) for each revenue division, vocational courses should be identified on the basis of needs as also the facilities available for such courses in the division; (b) for each revenue division, it should be assessed, in consultation with the various employers including industries (private, autonomous and government) as to the probable employment opportunities that are likely to be available in the next three years; (c) intake capacity for admission to the different vocations be prescribed first for the entire division and then for different institutions, on the basis of the employment opportunities likely to be available by the time the batch gets out successfully. In doing so, the number of failures and a small percentage who may go for independent business or trade may also be kept in view. (d) legislation should be done to make it compulsory that the employers/industries of all sectors shall recruit their personnel in the given areas only from among those who are successful at the vocational courses. This could be done by a co-ordinating agency eg. Employment Exchange; (e) adequate facilities for independent business and trades be provided by all the government and autonomous agencies so that those who, after the successful completion of vocational courses, intend to go for such business, are suitably encouraged.

For purposes of (a), (b) and (c), suitable committees at the division level with the Commissioner of the division concerned as Chairman, Collectors, Divisional Superintendent of Education, Officers of the Industries Department, Employment Officers and Principals may be constituted. For (d) either the State Governments or the Central Government may do so for the whole country. As regards (e), the state governments may make suitable provisions within their means and depending, of course, on the needs.

Avenues from vocational courses to higher education and better careers.

With the underlined principles of democracy and the constitutional guarantee of equal opportunities and facilities to grow in life, it must be ensured that there is no feeling whatsoever that joining vocational courses once means no future opportunities for higher education. Similarly, it should also be ensured that joining services after completing vocational courses does not seal prospects to rise in their careers in their particular areas of jobs if they are competent and promising.

Those who may join vocational courses will broadly constitute two sections. One section will be of those who are not considered fit or themselves do not think so, for higher education and the second will be those who though may be considered fit for higher education, but for economic reasons, prefer to join vocational courses for early service careers.

Not infrequently, it is found that one who lacked due seriousness earlier, later developed interest and passion for education. Although vocational education stream is designed to lead to employment or self-employment, it would serve a good incentive if the different branches of vocational courses are given equivalence and weightage for admission to Diploma and Degree Courses so that the talented ones are suitably encourged and looked after. Details could be worked out for this. Once this is done and the students are aware of this, a favourable atmosphere for the vocational courses will be created.

Those who may join vocational courses for an early service career under somewhat compelling circumstances, particularly due to economic reasons, should also have all opportunities to better their academic career through degrees. This will, on one hand, ensure that the talents are not wasted for want of availability of opportunities and on the other hand, even when those students join vocational courses in a state of helplessness, will have no regrets at any stage on this account.

Tasks Ahead.

In order to achieve the all-round objectives of delinking of degrees from jobs and plug the possible holes, the following steps are urgently required :

(i) to issue necessary orders to all organisations and make changes in Rules, wherever necessary, specifying the areas of delinking of degrees. This has to be done first by the Central Government and then by the State Governments; (ii) to identify the higher secondary schools to provide +2 general stream of education and to transfer the pre-university courses to higher secondary schools; (iii) to identify the vocational courses keeping in view the regional needs and potentialities and after consulting the employers of different sectors and prescribe in-take capacity of each branch. In prescribing the intake capacity, the failures and a small number that may be interested in independent professions should be taken into account; (iv) to enact legislation to make it obligatory on the part of the employers to recruit the personnel for the concerned vocations from among those passing out the vocational courses; (v) to establish and publicise the future possibilities of higher training and/or education even after vocational courses and even when in-service through part-time education, non-formal education and open university system; (vi) to decide equivalence of vocational courses to join diploma and degree courses with due weightage, so that talented students are not deprived of from bettering academic careers; (vii) to prepare and make available to the parents and students attractive pamphlets relating to the various vocations and the employment and self-employment possibilities, from the time the students reach the tenth class; (viii) counsellors should be appointed for each division whose main function should be to guide the parents and students about different vocations and prospects of employment. He should also make such guidance available at all high schools throughout the year. There is much that the parents and students have to be told and hence there is an imperative need that they understand the utility of vocational courses for that will then decide what percentage will join vocational courses. □

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DIRECTOR

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Information Service
JUN 1985

Air Chief Marshal I.H. Latif Addresses Convocation of Bombay University

Excerpts from the Convocation Address delivered by Air Chief Marshal I.H. Latif, PVSM, Governor of Maharashtra at the University of Bombay on 12th February 1985.

Convocation

"..To be products of Indian education, education which has an ancient tradition, originating from perhaps the earliest years of civilization, and to have the opportunity to merge one's talents and energy into the national effort of a free society and a free country is a privilege that must be valued and cherished. It is a privilege that you enjoy from today, but with it you also assume special responsibilities as key elements in the pace of progress of our people. In every country it is the system of education that can and must liberate the power and determine the direction of national development. In our country, expansion in the field of higher education has, as we all know, already reached gigantic proportions. The number of universities in the country has, since the early years of independence, multiplied five-fold: from about 30 in 1950 to about 140 by now; in 20 years colleges have gone up from nearly 1000 to nearly 5000; student enrolment in the same period has increased thirtyfold from 12 lakhs to 360 lakhs. Expenditure on university education has also risen; from about 15 crores in the First Five Year Plan to no less than 500 crores in the Sixth Plan, and the total expenditure on all forms and levels of education has gone up from about 150 crores to over 2500 crores in the Sixth Plan period.

The generative effect of the spread of education is, I believe, well reflected in our performance in other fields of national endeavour. Let us see the impact on some key areas: The birth rate per thousand of population has already dropped by nearly 20% from 42 in the mid-fifties to 34 in the early 80s, no mean achievement specially in a mainly rural and tradition bound society. Life expectancy has also risen from around 30 in the first few years of independence to well over 50 today; and, simultaneously, the death rate per thousand of the population has dropped from about 30 in 1947 to around 10 in 1981. Witness also the performance in the main sector of national activity, namely agriculture: in our vast rural areas where, as Mahatma Gandhi said, "the heart of India beats", production of foodgrains has taken a gigantic leap from a mere 50 million tonnes in the early 50s to over 150 million tonnes this year. Student enrolment in the sector of science and technology has multiplied more than tenfold, from 3000 when independence came to well over 30,000 today and India is now ranked third in the world, next only to the USA and the USSR in terms of mobilised scientific and technical manpower. Small wonder then that in the field of industrial development also our country now ranks eighth in the world in terms of installed capacity, range of production and sophistication of manufacture. With such a reservoir of talent available for energising industry, agriculture, commerce and a myriad other fields, we can well gauge the impact that expansion of education has had for releasing and activising the power within the people of the country for growth and prosperity.

Recognising the correlation of education and national development, and also the need to do all we can in the coming years to generate an Indian renaissance, it would be desirable to review as objectively and dispassionately as we can the strength and weaknesses of our system. I would like to highlight a few areas which I consider of importance.

First of all, education must mean the cultivation of both the intellect and the personality or character of the individual. In this process, it must promote the development of individuality—an individuality that also keeps in focus and remains in tune with the needs and aspirations of the people of the country. In the great thrust of an ever-expanding educational infrastructure and the plethora of universities, colleges, schools and institutes, the many lakhs of teachers and hundreds of lakhs of students, injection of information into young minds has been taking place on a massive scale but character training and personality development has not, in my view, received the attention it deserves; indeed as a properly developed system it is, I believe, almost totally absent. It is therefore precisely in this specific area that a drastic change in policy and priorities is needed. One of the foremost aims of our education policy at all levels should now be to provide a strong framework for individual personality development and through it shape and strengthen our national ethos. Intellect without character is like a body without a soul—or, if I may use a more poetic phrase—a plant that grows but never flowers. We must recognise that this task represents an awesome challenge to educationists but it will be, in my view, the litmus test of the true worth of the insights and experience of all of you who are our specialists and our experts.

Character training, I cannot help feeling, is to some extent atleast a matter of organisation rather than instruction; and also of example rather than of precept. Precepts of course have their utility, for instance in establishing a set of values. Far more difficult but far more valuable is the creation of the right environment which helps and encourages young minds to resolve personal and moral issues independently. Those who have, apparently, been well brought up at home may behave well and work well to please their parents or their teachers but this can never be a sound enough basis for conduct. What is also needed is a sense of responsibility to oneself, the determination to master one's emotions and physical faculties for the pursuit of excellence and the evolution of diamond-hard criteria for self-judgement. An essential part of the development of a sense of personal responsibility, equally, is pride in one's country, a respect for its traditions and a faith in its future—a faith that must stimulate lives of service and not just self service.

This is by no means as difficult a task as it may seem. It can be accomplished; it has been accomplished: The Battle of Waterloo, it is said, was won on the playing fields of Eton. Sports and participation in games are invaluable elements for character development. We all know this; but have we done all that is possible to give this activity the important place it deserves in the curricula of our schools and colleges? Sound judgement, tenacity and cool temper, indifference to bodily discomfort, teamspirit, leadership, all these can be nurtured through sports. The pleasurable glow of well-being that accompanies physical fitness, the quiet confidence that comes with the ability to attack and defend fiercely but without ill-will, the exhileration that follows risks taken and surmounted, all are invaluable experiences for building of character and the development of personality.

Social service and the N.C.C. are two other organisational areas which can, I most strongly feel, play a major role in this respect. They stimulate and strengthen a sense of responsibility, a sense of discipline, a sense of team-spirit and again, no less important, a spirit of service, or service before self. The desire to serve others must surely be one of the main springs of thought and action if individuals are to make a meaningful contribution to the strengthening of our society and the nation. In Bombay, members of the academic community are specially blessed—with a vast rural hinterland which can absorb huge scales of effort and in turn reward participants handsomely in their growth and in their training. We most mobilise these resources.

I must touch upon another important aspect of education. There is a tendency, an understandable tendency, in our institutions to fight shy of developing in students a mature attitude vis-a-vis religion. Perhaps this is so because people are oversensitive to the issues involved and are therefore hesitant to reach out and come to grips with this important element in character development. We must not put a negative meaning into secularism—regardless of what the dictionary meaning might lead one to think. Such an approach would deny us a powerful instrument for promoting moral values. The founding fathers of our Constitution surely gave 'secular' a more positive meaning—not the denial of a place for religion in national life but the acceptance of all religions as equal. In any case, there is no question that, specially in a country such as ours, a civilized attitude on religion is a rudimentary requirement for individual development, and undue timidity, in my view, amounts to neglecting an important area of responsibility. Some stimulus must be organised through our educational institutions to generate and shape the right attitude amongst the youth in this regard and make them better citizens than many of us have been. Actually, only a very simple idea need be stressed: that in each human being there is an element of the divine and it is the responsibility of each person to develop it in himself or herself and also recognise it in others. This is the essence of different streams of religious thought and by emphasising this central inspirational idea a secular and civilized attitude can be promoted and, with it, a more harmonious development of individual personality. Acquaintance with prayers of different religions and hymns and songs of various faiths could also, surely, help our youth recognise the intrinsic purity, beauty and practical usefulness of different religious thought.

In all this the role of teachers and their skill in communication needs no emphasis. This is another area that needs thought and attention. Teaching is no simple matter, apart from knowledge it requires technique, the skill of communication. This is so basic to good education that its cultivation cannot remain dependent on ad-hoc personal effort. As for primary and secondary education, for higher education also it needs to be properly organised and firmly rooted on a formal system. And such training must be undergone not just once at the beginning of a teaching career but updated and strengthened from time to time. Accountability for the performance of students, involvement with the interests of students and with their success and progress, and keenness to acquire and retain a high degree of professional ability are amongst the important requirements of our teachers. Equally, it is incumbent on the authorities to provide our teachers with adequate support and service conditions fully in keeping with their demanding responsibilities and decisions on proposals—I never like the word demand for—after all we are all members of a team with a common objective—taken as promptly as is possible. As long as teachers as a class are properly motivated and adequately equipped, the sheet anchor of our education system will remain alive and progressive.

Obviously, for modernising education systems and practices, considerable resource mobilization is necessary and too often have we heard the plaint that funds are in short supply pre-empting essential development. There are two aspects here which bear close attention: first the potential for exercising economy by cutting out items entailing wasteful expenditure and second the scope for mobilization of assets for internal generation of resources.

University finances is a subject of considerable concern to all of us. Little progress has been registered in modernizing management of funds. This must be done. Similarly, our Universities, and this University is no exception, could consider mobilizing their very substantial land assets for generating resources. Horticulture could, for instance, will help make productive use of land on the one hand and also add to the range of the University's extra-curricular programmes. Student participation in horticultural activity has, I believe, immense potential of educational value particularly for the youth who are sensitive and responsive to such influence. It would help inculcate a love for plants and knowledge and interest about the process of growth, develop ability to work with the soil and with tools and implements and thus create an experience that will stand them in good stead in later life. Equally, it may generate much needed resources for modernization and other programmes. Significant support to University Budgets can be generated over a period of time, I feel, if valuable real estate presently available to each is exploited with imagination and scientific skill.

I have referred to the massive scale of student enrolment in higher education. The pressure of members without doubt places today an almost intolerable strain on our infrastructure for higher education. Increasing the number of higher educational institutions is clearly not an answer by itself. With the world's largest output of formally educated persons coupled, unfortunately, with a totally unequal rate of generation of related job opportunities, the problem of unemployment can only intensify. It has to be clearly recognized that in the final analysis the capacity of a country's education system and its trained manpower requirements must be carefully matched, in numbers and in skills. Today the sad irony is that this yearning for the absorption in higher education is totally and tragically irrelevant to the real manpower requirements of the country. Greater vocationalisation is the obvious answer and one is greatly encouraged by the renewed emphasis placed on it by Government. Our universities also however have an important role to play in bringing about a better balance and I am happy that some small beginnings have already been made by the restructuring of courses. This process must be accelerated. But this needs money and I cannot help feeling that, simultaneously, we need to take a close look at the ever increasing gap between costs and fees. We found that the cost per student of one of the more popular courses is now roughly Rs. 5,000 whilst the fee has remained Rs. 1,500; this means that education of all such students, rich or poor, good or bad is subsidized by Government to the tune of Rs. 3,500. For courses in engineering and medicine public subsidy is infinitely more—even for the first degree course in medicine, for instance, it is nearly 2 lakhs. The interests of the weaker sections of our society must, of course, be fully safeguarded—without question—but surely those who can well afford it must atleast pay for the education they receive. And those who fail year after year, must the public continue to subsidize their education as well? Perhaps atleast somewhat higher slab of fees for those who fail more than once or twice would not be unjustified? But here again, I have no doubt in my mind that the weaker sections of our society must not only remain fully protected but receive every possible help and encouragement.

These and other issues relative to education policy are directly relevant to the tone and lifeblood of national activity and very urgently deserve the attention of our experts in the university system, in Government and in various fields of social sciences. However, whilst analysing and correcting our shortcomings let us not be unduly disheartened; let us also remember that usually issues that create problems are inevitable functions of the process of dynamic growth and our own impatience —impatience that in itself is a powerful spur to progress.

We stand today at a point in time the history of our nation when much depends on the choices we make for ourselves. It is wisely said: "Our legions are brim-full, our cause is ripe; there is a tide in the affairs of men, which taken at the flood, leads on to fortune, omitted, all the voyage of their life is bound in shallow and in miseries. On such a full sea are we now afloat, and we must take the current when it serves or lose our ventures".

We have a tremendous challenge before us but also, with it, a tremendous opportunity. Never before in recent history has there been such atmosphere and potential for growth as today. With our feet firmly on the ground let us reach for the stars.." ☐

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Brochure and application form available on prepayment of Rs. 15/- Bank Demand Draft, preferably State Bank of India, should clearly indicate in request letter, the specific programme form, applicant's address in CAPITAL LETTERS, and envelope to be superscribed "APPLICATION FOR ADMISSION".

Last Date for Request Letters by Post : May 20, and in person June 1, 1985. Completed application form with the registration fee of Rs. 20/- should reach the Institute by June 1, 1985 before 4.00 p.m.

SPECIAL PROVISION FOR SCHEDULED CASTES/TRIBES CANDIDATES (SC/ST): Reservation of seats for SC (15%) and ST (7½%) and application form sent FREE on receiving an attested copy of caste certificate granted by Revenue Officer. Candidate should have passed or appeared for the final examination of any Bachelor's degree. Travelling allowance reimbursed, free meels and hostel room provided during entrance tests only for those not employed.

Foreign Nationals : to apply through Indian Embassies on obtaining Brochure and Application Form obtainable on payment of Rs. 15/- plus Air Mail postage for 50 gms. Details given on Application Form. Those Foreign Nationals now in India should attach a financial guarantee certificate obtained from their Embassy Office in India.

Hostels: Limited seats. A few scholarships and stipends available for Indian Nationals only.

The Institute Reopens on Monday, June 24, 1985.

N. Krishnamoorthy
REGISTRAR

Role of Earth Sciences in Tapping Natural Resources of Manipur State

A panel discussion on "The Role of Earth Sciences in Tapping the Natural Resources of Manipur State" with Professor K.J. Mahale, Vice-chancellor, Manipur University in the chair was held on 20th April, 1985 at the University premises. Faculty members from the Departments of Earth Sciences, Life Sciences, Physics and Chemistry participated in the discussion.

Dr. R. P. Singh, Head of Department, Earth Sciences, while welcoming the participants, initiated the discussion.

Prof. K.J. Mahale stressed the need for participation by the scientists and other agencies for surveying the Manipur State from all aspects for tapping its natural resources. With the setting of a new University in this State a greater impetus has now been given and an avenue has been thrown open for embarking on this course of action.

Professor D. K. Ganguli of Earth Sciences Department, made a brief mention of all the available mineral resources in the entire Himalayan belt, in which fall the hill ranges of Manipur. He revealed the possibility of striking oil and natural gas in the State. He wanted a thorough search for these resources by the central agencies like G.S.I., ONGC etc.

Prof. K.V. Surya Narayan of the Earth Sciences Deptt. stressed how the study of mere geomorphic features will reveal the type of rocks and their structures. He also made out the point that oil should be present at great depths based upon the folded nature of the young rock types. He said that for tapping water, greater reliance must be made on the surface water than on the ground water, as aquifer characters are poor.

Professor C.C. Bhattacharjee of Gauhati University pointed out the dependence of the State for its prosperity on agriculture. Since the State is poor in mineral resources he stressed the need for developing agriculture and forestry based on surface water resources.

Dr. S.A. Hakeem of Earth Sciences Department recommended for the collection of accurate meteorological and hydrological data for determining the weather conditions, based upon which suitable crop pattern can be adopted for the State.

Dr. R.K. Ranjan of the Earth Sciences Department said in his paper that the rapid population growth has increased the pressure on land resources. He wanted the determination of an appropriate land ratio that would fit in with the optimum production of adequate food for the people. The prevailing climatic and physiographic conditions of the State should be properly assessed for determining the land potential of the State.

Dr. Th. Jekendra of Physics Department, analysing the rainfall characteristics of the State, recommended for storing rain water for irrigation during the lean period, because during the winter season the scarcity of water proved a bane for the very survival of the rural population.

Dr. H. Nandakumar Sharma, Head of the Physics Department stressed the need for conducting the magnetic and radiomatric surveys for determining the mineral resources.

Dr. P.S. Yadav of Life Sciences Department stressed the need for having micro-hydel plants to harness for utilization of surface rapid flows.

Prof. Mahale reviewed the various proposals made by the experts and called for generating data by the University Departments by adopting an inter-disciplinary approach. He averred that the Seventh Five Year Plan be remodelled in the light of the recommendations made in the discussion.

UGC's sanctions to Anna University

The University Grants Commission has sanctioned a total amount of Rs. 57.2 lakhs for strengthening the post-graduate education and research activities of the Chemical Engineering Department of Anna University under the COSIST Programme, the break-up being:

Towards strengthening of Post-Graduate Education, the UGC has sanctioned a non-recurring grant of Rs. 12.801 akhs and for recurring expenditure a sum of Rs. 1.25 lakhs.

Towards strengthening of Research facilities the UGC has sanctioned a non-recurring grant of Rs. 40.55 lakhs, for recurring expenditure a sum of Rs. 1.25 lakhs and for staff a sum of Rs. 1.35 lakhs.

The UGC has sanctioned a sum of Rs. 64,000 towards a major research project entitled 'Generation of Tamil for Information Display and Title Insertions in Television Broadcasting' to the Communication Engineering Division, College of Engineering of Anna University. The project duration is 1½ years. The sanction is made for the purchase of equipment worth Rs. 58,000/- and to meet the expenditure towards contingencies.

The UGC has also sanctioned the creation of a Post of Lecturer in Russian Language at the main campus of Anna Uninersity.

Indo-F.R.G. agreement for a project at Anna University

The Government of India has finalised the 'Indo-F.R.G. Agreement' for the Project Promotion of Institute of Remote Sensing at Anna University'. Mr Klaus E. Kemp of the German Agency for Technical Co-operation Limited would be the Co-ordinator for this project. Further course of action on the implementation of this programme is expected to be taken up soon.

News from Agril. Varsities

All India Workshop on Sorghum at PKV

The 15th All India Workshop on Sorghum, which was jointly organised by the Punjabrao Krishi Vidyapeeth and the Indian Council of Agricultural Research, was inaugurated on 6th May, 1985 by Dr. M.V. Rao, Deputy Director General of Indian Council of Agricultural Research, New Delhi in the auditorium of the College of Agriculture, Akola under the chairmanship of Dr. K. R. Thakare, Vice-Chancellor of the University.

Dr. Shukla, Director of Research, Punjabrao Krishi Vidyapeeth Akola briefed on the necessity of the workshop.

Dr. Shankarlal, Assistant Director General, I.C.A.R. stressed the importance of such workshop and expressed that efforts should be made to increase the production of sorghum so that the common farmers who are taking this crop in their fields could be benefitted. In his speech he also laid emphasis on the point that, this crop should be profitable despite of the increase in production. In order to motivate this, short duration varieties of hybrid jowar should be developed and made popular amongst the farmers of the region for which the collective efforts of agricultural scientists and extension workers were needed.

Dr. Vidyabhushanam, Coordinator, All India Sorghum Research Project, reviewed the research work done during 1984-85 and presented the report.

The chief guest of the function Dr. M.V. Rao while delivering his inaugural address said that, in this workshop prime importance should be given to chalkout the programme which will be instrumental in increasing the production of jowar and to make this crop profitable to the common farmers who mainly are taking this crop in their fields. He further said that in comparison to the production of rice and wheat the production of jowar was very poor and therefore, intensive efforts to achieve the goal be made keeping in mind that with the increase in production the quality, taste and stability should also be given serious thought.

Delivering his presidential address Dr. K.R. Thakare brought to the notice of all the delegates and dignitaries attending the workshop the gravity of the problem. He said that it was undoubtedly true that efforts should be canalised to increase the production of jowar to make the crop profitable to the common farmers. But it was also very necessary to make at the same time a market available for its sale. The situation has now arisen to think of the utility and market for this very important crop, he said. He further pointed out that gradually our society was preferring wheat instead of jowar for consumption, and on the other hand sorghum had no utility and no future except as bread. Having taken into consideration this dilemma immediate efforts were needed to develop a technology based on increasing the utility of jowar by preparing other edibles out of it. Only then, Dr. Thakare said that the production of sorghum could be profitable. While stressing the importance of this crop, he said, jowar is being used as food as well as fodder and hence special attention should be given towards research on this crop and hybrid seed be made easily available keeping in mind to maintain the economic balance between the demand and supply.

About hundred delegates from

Association of Indian Universities

AIU House, 16 Kotla Marg, New Delhi-110002

Applications are invited by 4th June, 1985 on the prescribed forms available on payment of Rs. 2/- from the office of the Association of Indian Universities for the following posts:

1. **Cultural Officer** (Rs. 700-1300): Master's Degree from a recognised institution/university with a Bachelor's Degree in Fine Arts or its equivalent from a recognised university/organisation. Five years experience with a minimum of two years in organising cultural activities at University or equivalent level. Incumbent will be responsible for organising cultural programmes at Inter-University/National Levels. Deputation from University/Colleges/other organisations will be preferred. (Well qualified candidates may also be considered for the higher scale of Rs. 1100-1600).

2. **Assistants** (Three) : (Rs. 425-800) : Graduates with atleast five years experience in Govt./Semi-Govt. Organisations/Educational Institutions. Knowledge of typing will be preferable. In addition : For post (i) Candidates should be B.Com. (Hons.) with atleast second division or B.Com with first division. Knowledge of use of computers in accounts will be preferable. For post (ii) Experience in production, printing and proof reading. For post (iii) Flair in noting & drafting, familiarity with office procedures.

3. **Stenographer** (Rs. 425-800) : Graduate having speed of 120/60 w.p.m. in shorthand/typing with minimum three years experience as Junior Stenographer.

4. **Lower Division Clerk** : (Rs. 260-400) : Higher Secondary with typing speed of 40 w.p.m. Preference will be given to those having office experience and knowledge of shorthand.

Posts are temporary but likely to continue.

All posts carry AIU allowances generally at the Central Government rates. Preference will be given to SC/ST/Ex-servicemen.

all over the country participated in this workshop representing a number of institutions such as Indian Council of Agricultural Research, Agricultural Departments from the various States, Seed Corporations, Agricultural Universities, Private Organisations etc.

Video workshop concludes at PAU

Presiding over the concluding function of three-day regional workshop on 'Use of Video for Enhancement of Agricultural Development' organised at Punjab Agricultural University recently, Dr. Sukhdev Singh, Vice-Chancellor of the Punjab Agricultural University said that Video cassettes on various farm operations could go a long way in training the farmers and disseminating the new farm technology. He hoped that the deliberations and exercises during the last three days would help in training the participants to acquire practical skill in producing video cassettes for quick transfer of farm technology to the remotest corners of the country.

Dr. V.K. Dubey, Secretary of the National Council of Developmental Communication (NCDC), Varanasi, said that the main objective of this workshop was to create an awareness about the role of video in enhancing the development work. He said that video technology had so far been used for screening feature films in homes by the affluents and the Doordarshan for presenting their programmes, but the medium was now being used for the transfer of farm technology also. He further said that video cassettes could be effectively used for class-room teaching, personal learning and for sharing the knowledge by sister institutions. Dr. Dubey told that the NCDC was in a position to train the man-power and could provide the media support for the production of video cassettes. This facility was also available for the individuals and organizations alike, he added.

Dr. K.S. Nandpuri, Director of Extension Education said that the Communication Centre of the University would soon start producing video cassettes on various topics relating to agriculture, agricultural engineering and veterinary science to feed the Doordarshan Kendra, Jalandhar. These cassettes would also be used for educating the farmers during the kisan melas.

CALENDAR OF EVENTS

Proposed Dates of the Event	Title	Objective	Name of the Organising Department	Name of the Organising Secretary/Officer to be contacted
May 25-June 8, 1985	UGC Sponsored Workshop on "A Possible Methodology for Teaching English for Communication at undergraduate level".	To explore the possibilities of evolving and developing new strategies in the teaching of core English for communication at the undergraduate level and also to effect improvement of curricula, teaching methods, examination reforms, etc.	Faculty of English, Gandhigram Rural Institute, Gandhigram	Shri M.R. Kubendran, Faculty Member.
June 3-8, 1985	UGC Sponsored Symposium on Arthur Miller as representative of American Drama.	—	Govt. Postgraduate College, Dharamsala (H.P.)	Dr. Atma Ram, Principal
November, 28-29 1985	**International Conference on New Technologies in Higher Education**	**To assess the possibilities of the now available new technologies in the background of the broad social and cultural context and the state and trends of Higher Education in India and other developing countries**	**Association of Indian Universities, IIT/Delhi, JNU, Jamia Millia and University of Delhi**	**Prof. Tapas Mazumdar (JNU), Prof. S. Shukla (Jamia Millia), Prof. L.R. Shah (JNU)**
December 12-14, 1985	Asia Pacific Symposium on Wind Engineering	Nature of wind and effect on structures and study of damage and its socio economic implications	Civil Engg. Department, University of Roorkee, Roorkee	Dr. S. K. Pathak, Organising Secretary
December 16-18, 1985	Indian Geotechnical Conference	To advance the state of knowledge about the geotechnical engineering and to give definite direction to the future research work	Earthquake Engg. Department, University of Roorkee, Roorkee	Dr. V. H. Joshi, Organising Secretary

INDIAN INSTITUTE OF TECHNOLOGY
MADRAS

ADMISSION TO Ph.D. PROGRAMMES IN SCIENCE AND HUMANITIES & SOCIAL SCIENCES DEPARTMENTS
1985-86

Applications are invited for admission to Ph.D. programmes in the following Departments at the Institute for the academic session 1985-86 commencing on July 15, 1985.

Chemistry: Analytical Chemistry; Inorganic Chemistry; Organic Chemistry; Physical Chemistry; Theoretical Chemistry (Molecular Spectroscopy and Quantum Chemistry); Bio Chemistry; Solid State Chemistry.

Mathematics: Differential Equations; Numerical Analysis; Approximation Theory; Complex Analysis; Fluid Mechanics; Magneto Hydrodynamics; Elasticity; Statistical Inference; Statistical Quality Control; Applied Probability and Stochastic Processes; Combinatorics; Graph Theory; Quantum Field Theory; General Relativity and Cosmology.

Physics: Experimental and Theoretical Solid State Physics; Magnetic Resonance; Infrared and Optical Spectroscopy, Mass and Charge Transport Phenomena, Dielectric Relaxation; Microwaves, Optical and Magnetic Memories, Properties of thin films, Luminescence, Semiconductors, X-ray Crystallography, Low Temperature Physics including superconductivity; Lasers, Electro-optics; Lattice Dynamics, Disordered solids.

Humanities and Social Sciences: Economics; English; Industrial Engineering; Industrial Management; Psychology.

Duration: Minimum 2 years (four semester)

Scholarship: Holders of Master's degree in Science/Humanities and Social Sciences Rs. 1000/- p.m. for the first 2 years and Rs. 1200/- p.m. from 3rd year onwards subject to satisfactory performance. Holders of Master's Degree in Engineering Rs. 1200/- p.m.

Minimum Qualification for admission: Master's degree with I Class or 60% marks in the relevant areas. Candidates in the final year of their Master's degree programme are also eligible to apply. To be eligible for scholarship, candidates with Master's degree in Science/Humanities and Social Sciences should qualify in CERA 85 (Common Examination for Research Admission) scheduled to be held on 25th June 1985. Further details on the examination can be had from the Chairman, GATE, I.I.T., Madras-600036.

Concession to candidates belonging to Scheduled Caste/Scheduled Tribe:

1. Certain percentage of seats are reserved for SC/ST candidates.
2. Relaxation upto 5% in the qualifying examination.

External Registration: Facilities are available for persons working in scientific laboratories/industries with R&D establishments to work for M.S. and Ph.D. in Industrial Engineering/Management. The candidate must possess the minimum academic qualifications prescribed for the full time candidates and also a minimum of two years of continuous service in these organisations research/design/development areas. Candidates not possessing first class or 60% marks but possessing outstanding R&D experience (measured in terms of research publications in standard journals and patents taken) may also be considered for admission subject to their satisfying the prescribed conditions. Such candidates have also to appear for a departmental qualifying examination. The candidates must be sponsored by their organisation with an undertaking that the organisation will provide all facilities to the employees to pursue research. The candidates, if selected, should take leave and relief from the employer for the prescribed residence period. No scholarship will be paid for external registration candidates. NO T.A. WILL BE PAID FOR THESE CANDIDATES ATTENDING INTERVIEWS. Faculty members from Universities/Colleges are not eligible to apply under this scheme.

General

1. Detailed information about eligibility of candidates with different backgrounds will be supplied along with the application.
2. Candidates called for interview to full-time programme will be paid second class to and fro rail fare from their place or residence to the Institute by the shortest route.
3. Application form and other details can be obtained by candidates on requisition mentioning clearly the programme/department for which they are applying and by sending (i) a Bank Draft for Rs. 12/- in favour of Indian Institute of Technology, Madras, payable at Madras and (ii) a self-addressed unstamped envelope (27 cm × 12cm) to: The Deputy Registrar (Academic), Indian Institute of Technology, Madras-600036.

The cover addressed to the Deputy Registrar (Acd.) should be superscribed as "ADMISSIONS—1985-86—Ph.D" on the left hand corner of the cover. A candidate proposing to apply for more than one department/programme should request for additional application form for which a fee of Rs. 12/- for each additional application form should be included in the Bank Draft. Those who apply for *External Registration* should indicate the same clearly in the requisition.

LAST DATE FOR RECEIPT OF REQUISITION FOR APPLICATION BY POST	**: 10 JUNE 1985**
LAST DATE FOR RECEIPT OF COMPLETED APPLICATION	**: 24 JUNE 1985**
PROBABLE DATES FOR INTERVIEW/ TEST	**: 18 & 19 JULY 1985**

Advt. No. F. Acd/ARU/3/85-86

MINISTRY OF EDUCATION

GERMAN DEMOCRATIC REPUBLIC GOVERNMENT SCHOLARSHIPS : 1985-86

Applications on plain papers are invited from Indian nationals for the award of ten scholarships offered during 1985-86 by the Government of German Democratic Republic for obtaining Doctor's Degree for a period of 3-4 years in the following subject-fields:

1. GERMAN STUDIES:
2. NAVAL ARCHITECTURE/MARINE ENGINES
3. POWER PRODUCTION ENGINEERING; AND
4. ECONOMICS.

Educational Qualifications: (a) *For subject-fields at S. Nos.* 1, 3 & 4 *above:* Uniformly good academic record with 60% or above marks at Master's Degree in Science/Engineering/Technology/Arts/German Language, as the case may be. (b) *For S. No.* 2 *above:* Uniformly good academic record with 60% or above marks at B.Tech./B.E. Degree. (c) Sufficient knowledge of German Language (proof required).

Essential Experience: Atleast two consecutive years' teaching/research/practical experience as on 1st October, 1985 in the subject-field selected after passing the prescribed qualifications. Successful completion of M.Phil would be counted towards experience.

Age: Must be less than 35 years as on 1st October, 1985 (relaxation in age upto two years will be given in the case of Scheduled Caste/Tribe candidates). Upper age limit and experience can be relaxed by not more than three months at the discretion of the Selection Committee in the case of brilliant candidates.

Value: The GDR side will pay maintenance allowance of 500 Marks per month; tuition and examination fees; medical care free of charge; internal travel connected with the scholars' studies.

Passage cost: The travel expenses from India to GDR and back will be borne by the candidate or his/her sponsorers/employers. Subject to the availability of funds, the passage cost may be met by the Government of India, provided the candidate is eligible under the rules.

Note : (i) The following must be attached with the application : (a) Attested copy of the certificate certifying the date of birth. (b) Attested copy of the marks sheet of the qualifying examination. (c) Attested copies of all degree/diplomas/certificates, etc. (ii) Candidates with equivalent foreign qualifications will also be considered. (iii) Master's Degree means M.A./M.Sc./M.Tech but not M.Phil or Pre-Ph.D. (iv) Where Grades are awarded, the conversion formula of the University/Institution must be indicated. (v) Candidates must furnish a clear and precise programme of study/research in the GDR. (vi) Applications in the subject-fields other than those specified above will not be considered. (vii) Candidates who have already been abroad for study/specialisation/training either on a scholarship or on their own are eligible to apply only if they have been in India for atleast three consecutive years after their return from abroad, (viii) Candidates should have adequate knowledge of the geographical situation, culture & heritage of India & the GDR. (ix) Applications of candidates who are at present abroad, will not be considered. (x) Candidates who do not possess the requisite qualifications need not apply. (xi) The application form should be accompanied by a crossed Postal Order of Rs. 5 (and Rs. 1.25p. in case of Scheduled Castel Scheduled Tribe & other backward classes) payable to the Secretary, Ministry of Education, New Delhi. (xii) Applications which do not contain Postal Order will be considered incomplete and will not be considered. Candidates should apply for the above scholarships on a plain paper, furnishing the following detailed particulars to the *Secretary, Ministry of Education, External Scholarships Division, Section E.S.I., Room No.* 516 *'B' Wing, Shastri Bhavan, New Delhi*-110001, by **30th May, 1985.** Applications received late will *not* be entertained.

FORMAT OF APPLICATION

1. Name of the Scholarship Scheme : G.D.R. Government Scholarships, 1985-86.
2. (a) Subject; (b) Sub-subject.
3. Name of the candidate (in Block Letters), with full mailing address.
4. Date of birth and the State to which the candidate belongs.
5. Whether a member of SC/ST or a Tribal or *aboriginal* community? If so, give full particulars.
6. Academic record starting from High School/Higher Secondary onwards:

Name of the University/Board/Institution	Exam(s) Passed	Year of passing	Division/Class with position, if any*	Percentage of marks obtained & position, if any	Subjects taken

*In case no Division/Class is awarded and only grading is done, the conversion formula adopted may be mentioned.

7. Details of professional/practical/training and research experience, specifying the period and number of papers published, previous employment with name and date of employment, if any.
8. Nature of the present employment with the date of appointment, designation and the address of the employer.
9. Have you been abroad? If so, give full particulars of the country and the period. Also mention the year of return to India.
10. Proposed programme of study/research/training, specifying: (i) the work in which engaged at present; (ii) nature and programme of study/research desired; (iii) future plans/prospects after the proposed studies/research; and (iv) how are these related to the technical or economic development of India?
11. Crossed Postal Order of Rs. 5/- (Rs. 1.25 paise in case of SC/ST candidates etc.) (No. & date of postal order to be given) may be attached with the form with passport size photograph (one copy).

Note : Employed persons must send their applications fully sponsored by the employers. However, advance applications will be considered provisionally pending sponsorship by employers.

Place: Date: (Signature of Candidate)

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A.I.U. PUBLICATIONS

		Rs.
1.	Universities Handbook—1983-84	350.00
2.	Handbook of Engineering Education—1984	14.00
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Note: Also available in paper back in individual discipline

21.	Social Sciences & Humanities—1970-75	150.00
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Sales & Publication Officer

Association of Indian Universities

AIU House, 16 Kotla Marg, New Delhi 110002

Telephones : 274941, 276780

AIU Library

Established in 1965, the AIU Library has acquired over the years a valuable collection of books and documents on Higher Education. Among the topics prominently represented are Educational Sociology, Educational Planning, Educational Administration, Teaching & Teachers' Training, Examinations, Economics of Education and Country Studies. Developing fields of Adult Education, Continuing Education and Distance Education, and Educational Technology are also well stocked. The Library is particularly strong in its collection of reports whether they are on the setting up of different universities or on the state of Higher Education. Files of Annual Reports of different universities are also maintained. Readers are kept informed of the latest acquisitions through our column 'Additions to AIU Library'.

The Library also receives about a 100 periodical titles on Higher Education. All these are indexed regularly and a select list appears every month as 'Current Documentation in Education'.

Doctoral Degrees awarded during the preceding month are reported as 'Theses of the Month' while registrations made for such degrees are flashed as 'Research in Progress'. Bibliographies are also compiled and supplied on demand.

Research scholars and students of education are welcome to use these resources. The Library is situated at 17-B, Indraprastha Marg, New Delhi-110 002. It is open from 10 a.m. to 5 p.m. Monday through Saturday except Second Saturday. Access can also be had through inter library loan for which requisition must be made through your Librarian.

THESES OF THE MONTH

A list of Doctoral Theses Accepted by Indian Universities

BIOLOGICAL SCIENCES

Anthropology

1. Barua, Sanmitra. *A demogenetic study among the muslims of West Bengal.* U Calcutta.
2. Panesar, Dharam Pal Kaur. *Secular trend in height and heritability of body measurements in an Indian population: A family study in urban and rural environments.* U Delhi.
3. Puran Chand. *Group differentiation in isolation: A comparative morphometric study of Malaneese in relation to some neighbouring populations of Himachal Pradesh.* Pb U, Chandigrah.
4. Shashi Bala. *A qualitative and quantitative study of amniotic fluid proteins: Developmental changes in the total proteins, protein fractions and alpha-fetoprotein.* U Delhi.

Biochemistry

1. Ameeta Rani, Veldurthy. *Acute and short term effects of ethanol on the Glutamate, Gaba, Gangliosides and membrane bound enzymes in rat brain.* OU, Hyderabad.
2. Chum, Alka. *Studies in environmental biochemistry : Some aspects of the xenobiochemistry of propane* 1, 2 *diol.* Pb U, Chandigarh.
3. Muddeshwar, Manohar Gangadhar Rao. *Certain factors affecting ascorbic acid metabolism in animals.* Nagpur U.
4. Prabh Jit Kaur. *Biochemical changes during germination of musk melon,* Cu *cumis melo seeds.* Pb U, Chandigarh.
5. Theertha Prasad, D. *Biochemical studies on the testicular acid phosphatases of a rare primate, Loris tardigradus lydekkerianus.* U Mysore.

Microbiology

1. Cherian, Sosamma. *Glycogen degrading enzymes and their regulation in benthic animals and estuarine fish.* U Cochin.
2. Chhibber, Sanjay *Physico-chemical and immunological properties of Klebocins.* Pb U, Chandigarh.
3. Hiremath, Annapurna B. *Studies on role of fungi in the sewage stabilisation pond ecosystem.* Gulbarga U.
4. Sethan, Phiroze Behram. *Factors regulating nitrogen fixation in rhizobial species.* MSU, Baroda.

Marine Biology

1. Krishnaiah, Manyam Rama. *Studies on the fishery and fish productivity and on the biology of mystus AoR* (*Hamilton*) *Buchanan* 1822 *of Nagarjuna Sagar Reservoir in Andhra Pradesh.* Andhra U, Waltair.
2. Zachariah, Thomas. *Studies on megalops: Eyprimoides.* U Ker, Trivandrum.

Botany

1. Atreya, C.D. *Molecular approaches to genome analysis in Arachis species.* U Hyderabad.
2. Bagchi, Suvendra Nath. *Isolation and biochemical characterization of nitrate reductase mutants of* N_2 *fixing cyanobacteria in relation to the regulation of nitrogenase, heterocyst and glutamine synthetase.* U Hyderabad.
3. Bhagavan Dora, Kotni. *Breedings studies for evaluation of high yielding lines in gengelly, Sesamum indicum* L *with associated resistance for pests and diseases.* Andhra U, Waltair.
4. Chaudhari, Gopal Shrawan. *Studies in the acanthaceae* SPU, Vallabh Vidyanagar.
5. Chopra, Ravinder Kumar. *Biology of Corticolous myxomycetes.* HPU, Shimla.
6. Foughat, Ranbir Singh. *Assessment of the germplasm of apple growth in Kashmir Valley.* U Jammu.
7. Ghate, Nilima P. *The study of the mycoflora of industrial waste from some paper and pulp factories in Maharashtra.* U Poona.
8. Ghosh, Archana. *Cytological investigations on the cell population of plant tissue culture.* U Calcutta

9. Gore, Shridhar Chandrakant. *Nature of gene action for certain quantitative and qualitative characters in linseed, Linum usitatissimum Linn.* Devi Ahilya, Indore.

10. Hota, Manoranjan. *Eco-physiological effect of industrial wastes of a caustic chlorine factory on some algal organisms with particular reference to effluent mercury.* Berhampur U.

11. Manoharan, K. *Studies on the role of membrane lipids in morphogenesis in plant tissue culture and protoplasts.* JNU, Delhi.

12. Manorama, Karpurapu. *Morphological investigations in polygonaceae.* Andhra U, Waltair.

13. Mathur, P.K. *Contributions to the analysis of some grazing land ecosystems in the Great Indian Desert and an investigation on biochemical and physiological distinctions of some ecotypes of Cenchrus setigerus, a prominent fodder grass of arid and semi-arid areas.* Saurashtra U.

14. Mishra, Dinesh Prasad. *Numerical taxonomic and trichome studies in euphorbiaceae.* HS Gour, Sagar.

15. Mishra, Rekha. *Studies on pollen storage and viability especially of 3-called systems.* U Delhi.

16. Mohanty, Shyam Sundar. *Parasitism of Cuscuta Chinesis.* Utkal U, Bhubaneswar.

17. Mudaliyar, Anita. *Role of manganese in growth reactions in plants.* Devi Ahilya, Indore.

18. Nakade, Surendra Dashrath. *Embryological studies in the rubiaceae.* Nagpur U.

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20. Papa Rao, J. *Studies on the mechanism of chromosome stability in Barley interspecific hybrids.* Hyderabad U.

21. Prasada Rao, Kotikalapudi Kanaka. *Evaluation of sugarcane varieties for certain economic attributes.* Andhra U, Waltair.

22. Raj Kumar, B. *Ecology of algae in the river Manjira (A.P.) with special reference to its lithophyticflora.* OU, Hyderabad.

23. Rajpal, Vijay Laxmi. *Modification of the mutagenic effectiveness and efficiency of ethyl methane sulphonate in Hibiscus sabdariffa variety AMV1.* Bhopal U.

24. Ramakrishna, H. *Geobotanical study of some Gondwana deposits of Pranhita-Godavari Garden of Andhra Pradesh.* O U, Hyderabad.

25. Satapathy, Sachidananda. *Eco-physiological effect of industrial wastes of caustic chlorine factory on fishes with particular reference to effluent mercury.* Berhampur U.

26. Satheesan, K.V. *Physiology of growth and productivity of turmeric, Curcuma domestica Val in monoculture and as intercrop in coconut garden.* Calicut U.

27. Sharma, Raghunandan. *Studies on the helotiales of Eastern Himalayas and adjoining hills.* Pb U, Chandigarh.

28. Suri, Raj Anil. *Studies of some factors involved in pathogenesis.* Pb U, Chandigarh.

29. Sworupanandhan, K. *Taxonomic and ethnobotanical studies on Asclepiadacea (R.B.R.) of Kerala.* Calicut U.

Zoology

1. Alka. *Studies on certain chitin synthesis inhibitors in four species of anopheline and culicine mosquitoes.* U Delhi.

2. Davinder Singh. *Studies on the reproductive physiology of the poultry namatode Ascardia gall Schrank,* 1788. PAU, Ludhiana.

3. Gudsoorkar, Shashikant R. *Evaluation of potential generic toxicity of some drugs.* U Poona.

4. Lahon, Bhupen. *Limnology and fisheries of some commercial beels of Assam, India.* Gauhati U.

5. Meena Kumari. *A study of sertoli cell-germ cell interactions during the ontogeny of spermatogenesis in the laboratory rodent.* U Delhi.

6. Mohammad Ejaz Hussain. *Studies on the olfactory receptor responses and pheromone perception in rice moth.* JNU, Delhi.

7. Prasuna, A. Lakshmi. *Influence of exogenous administration of ecdysones and ecdysome analogues on growth and moulting of certain insect species.* OU, Hyderabad.

8. Rai, Renu. *Effect of certain heavy metals on blood chemistry of a teleost catla, HAM.* Bhopal U.

9. Sankaran, K. *Studies on rabbit intestinal glucoamylase maltase complex.* U Hyderabad.

10. Venkata Reddy, Velagala Peda. *Studies on zooplankton of Waltair Coast with special reference to polychaete larvae.* Andhra U, Waltair.

11. Ventkatesh, M.G. *Biology, ecology and ethology of the Indian shorefly Brachydeutera longipes Hendel.* Bangalore U.

Medical Sciences

1. Bhatnagar, Raj Kishore. *Studies on the genetically controlled markers in human blood and bloodstains using electro phoretic methods.* HS Gour, Sagar

2. Kuldeep Kaur. *The LH red blood cell membrane specificity in man and selected animals.* Pbi U, Patiala.

3. Laha, Manoj Kumar. *A study of medicinal plants yielding steroidal compounds.* NBU, Rajarammohunpur.

4. Lochan, Prem. *Epidemiology of R-plasmids encountered in salmonella species of human origin.* U Delhi.

5. Malhotra, Promilla. *A study of biological markers in various malignancies.* Pbi U, Patiala.

6. Narayana Reddy, Manda. *New spectrophotometric methods for the determination of some vitamins.* Andhra U, Waltair.

7. Sreenath, T.L.V. *Biochemical and microbiological studies of some non-steroidal anti-inflammatory drugs.* OU, Hyderabad.

Agriculture

1. Arora Rupinder. *Evaluation of phytopathogenic abilities of leaf disease fungi from certain crop plants.* RSU, Raipur.

2. Bhardwaj, Shrwan Dev. *Nitrogen levels and harvesting management studies on yield and quality of essential oil in peppermint cultivars Mantha piperita Linn.* HP Krishi, Palampur.

3. Deshmukh, Ramesh Kashinathrao. *Sowing and harvesting time influencing seed-yield, quality and storability in soyabean.* IIT, Kharagpur.

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12. Roy, Narayan. *Genetic and karyotypic investigation in barley, Hordeum vulgare L.* RAU, Samastipur.

13. Roy, Ramkauleshwar. *Optimization of water and fertilizer for production of crops and rice based cropping pattern in relation to farm resources.* IIT, Kharagpur.

14. Singh, Om Prakash. *Altitudinal soils of Mizoram, India: Their characterisation, classification and genesis.* IIT, Kharagpur.

15. Singh, Ram Awatar. *Appropriate agronomic practices for augmenting production and quality of groundnut in acid lateritic soil.* IIT, Kharagpur.

16. Sinha, Ram Kumar Prasad. *Investigations on alternaria spp affecting rapeseed and mustard.* RAU, Samastipur.

17. Thapa, Chander Dev. *Studies on the dry bubble disease of mushroom, Agaricus brunnescens Peck caused by Verticillium fungicola (Preuss) Hassber.* HP Krishi, Palampur.

18. Tripathi, Diwakar *Studies into phosphorus availability and transformation and use of rock phosphate with and without farm yard manure and superphosphate on acid alfisol of Himachal Pradesh.* HP Krishi, Palampur.

19. Wangikar, Shamsunder Dattopant. *Study of the communication patterns among extension personal in development organisation.* Marath U, Aurangabad.

Veterinary Science

1. Mohammad Naim Nassime. *Disorders associated with diaphragmatic hernia in bovines.* HAU, Hissar.

CURRENT DOCUMENTATION IN EDUCATION

A list of select articles culled from periodicals received in AIU Library during April, 1985

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Anastasi, Anne. Diverse effects of training on tests of academic intelligence. *New Directions Testing Measurement* (11), 1981, 5-20.

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Wiley, David E. Improving policy development. *New Directions Testing Measurement* (10), 1981, 49-64.

TEACHING

Barol, Bill. The threat to college teaching. *Academe.* 70(5), 1984, 10-7.

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EVALUATION

Austin, Gilbert R. Exemplary schools and their identification. *New Directions Testing Measurement* (10), 1981, 31-48.

Blok, H. Estimating the reliability, validity and invalidity o,f essay ratings. *J Ednl Measurement* 22(1), Spring 1985 41-52.

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Frary, Robert B. Multiple-choice versus free-response: A simulation study. *J Ednl Measurement* 22(1), Spring 1985, 21-31.

Rentz, R. Robert. Innovations in the practice of measurement. *New Directions Testing Measurement* (10), 1981, 91-8.

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Klitgaard, Robert E. and ohters. The economics of teacher education in Pakistan. *Comp Edn Rev* 29(1), 1985, 97-110.

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Varshneya, M.C. and Parakale, R.K. Quality improvement in agricultural university education of Maharashtra. *Univ News* 23(12), 1985, 4.

COMPARATIVE EDUCATION & COUNTRY STUDIES

Hua, Z.Y. Some steps on the reform in higher education. *Univ News* 23(15), 1985, 4-5.

Pandia, Mahendra N. Towards more meaningful higher education. *Prog of Edn* 59(9), 1985, 209-212.

Sri Lanka, University Grants Commission. University education in Sri Lanka: A plan for development. *ABCD* (68), 1985, 13-15.

SCHOOL OF PLANNING AND ARCHITECTURE

4, Block-B, I. P. Estate, New Delhi-110002

(Deemed to be a University under
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REGISTRAR

Applications are invited from Indian Nationals for the above post in the School of Planning and Architecture, New Delhi.

Pay-Scale : Rs. 1300-1700 (May be revised to Rs.1500-2500 and made applicable as per rules).

Age limit : Below 50 years

Qualifications: Essential

(i) A Second Class Master's Degree of a recognised University or a Second Class Bachelor's Degree of a recognised University with Master's Degree of a recognised University.

(ii) Ten years' experience in an executive position in administration and Financial affairs and control in recognised institution/organisation.

Desirable

Familiarity with admissions, examinations, Committees Council meetings, sensitiveness and constructive approach to the problems of students, personnel and faculty and capacity to develop corporate life.

Service Conditions and Benefits

The post carries benefits of C.P. Fund-cum-Gratuity/G.P. Fund-cum-Gratuity-cum-pension and Central Government Health Scheme Services on appointment. The period of probation is one year. Allowances are as admissible to comparable posts in the Government of India. House Rent Allowance is admissible at 20% of the basic pay.

Procedure for applying

Applications on prescribed form accompanied by attested copies of certificates and testimonials and a crossed Indian Postal Order of Rs. 5/- (non-refundable) as the Application fee (Rs. 1.25 paise in case of SC/ST candidates) in favour of **School of Planning and Architecture, New Delhi-2,** should reach the Registrar of the School by **June 20th 1985.** Request for forms must be accompanied by self-addressed unstamped 25 cm × 12 cm envelope. Applicants who are in the employment of Government/Semi-Government organisations or of any Government Undertaking must send their applications through proper channel.

Candidates from outside Delhi called for interview will be paid II-Class Rail fare for both the Journeys (within-India).

SPA/A/1/85 REGISTRAR

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—as below are required for different Research Projects at Indian School of Mines which is deemed to be a university under the UGC Act:

(A) Junior Research Fellows (JRF): (Twenty one, likely to increase) in departments of Applied Geology, Applied Geophysics, Electronics and Instrumentation, Fuel & Mineral Engg. and Mining Engineering.

Value of Fellowship

(1) Candidates who have qualified in the National Test: A Stipend of Rs. 1000/- per month and contingency grant of Rs. 5000/- per annum.

(2) Candidates who have not appeared in the National Test : A Stipend of Rs. 800/- per month and contingency grant of Rs. 3000/- per annum. In this case, a declaration accepting the terms must accompany the application.

Duration: Normally three years, but in some cases 1½-2 years only.

Qualification

Graduates in Mining, Mechanical, Chemical, Civil, Electrical and Metallurgical Engineering, or Ore Dressing, and MSc/MSc Tech in Maths, Physics, Chemistry, Appl. Geology/Geology and Ceophysics/Appl. Geophysics in relevant disciplines — see Para 3.

(B) Research Associates: (Eight-likely to increase) in the departments of Applied Sciences, Fuel and Mineral Engg. Mining Engg. and Petroleum Engg.

Value of Fellowship : Rs. 1400/1600/1800/2000/- per month (consolidated) depending up-on qualifications and experience, with a contingency grant of Rs. 5000/- per annum.

Duration: Three years.

Qualification

Doctorate or MPhil in Physics/Appl Physics/Appl Maths/Physical Chemistry/Environmental Science, (OR) MTech in Chemical, Mineral, Mining and Environmental Engg.

(C) Research Officers: (Two, both for Deptt. of Appl Geophysics—one each in disciplines of Geology and Geophysics)

Scale of Pay : Rs. 700-1300/- plus allowances admissible to ISM employees.

Duration : Two years.

Qualification

M.Tech or MPhil in Applied Geology/Geophysics with one additional year's research experience (OR) MSc Tech (or equivalent) in Applied Geology/Geophysics with three years research experience—length of experience being relaxable in case of candidates otherwise found suitable.

2. Eligibility Criteria

(1) **Age**: Normally below 30 years for JRF and 35 years for Research Associate and Research Officer.

(2) **Academic Performance**

(a) Pass in (UGC/CSIR) National Test (OR)

(b) For those who have not passed the National Test, at least 60% marks (50% for SC/ST students) in the qualifying examination. These candidates will have to also undergo an interview/test conducted at ISM.

3. General Conditions

(1) 15% and 7½% slots reserved for S/C and S/T candidates respectively if available; otherwise open to general candidates.

(2) Where admissible under rules, selected candidates would be required to register for M.Tech/M.Phil/PhD of the School.

(3) JRFs will be required to deposit a refundable caution money of Rs. 500/- at the time of joining.

(4) On completion of two years satisfactory research, JRFs can be promoted on SRFs.

Application Forms with a statement containing full details of projects/areas of work/qualifications prescribed in respect of different specific assignments and other relevant issues can be seen from a detailed Brochure which can be obtained on sending a self-addressed and stamped (Re. 1/-) envelope of 22 cm x 10 cm size to the undersigned.

4. Interested candidates may submit their applications so as to reach the undersigned on or before **June 15, 1985**.

The application should clearly mention the slot applied for: JRF/Research Associate/Research Officer.

S. P. Varma
REGISTRAR

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NOTIFICATION

MADURAI KAMARAJ UNIVERSITY

Admission to Master of Science in Biotechnology :

Applications are invited for admission to Master of Science in Biotechnology course conducted in the School of Biological Sciences of this University for the year 1985-86.

Eligibility : A First class in B.Sc. degree in Biology, Botany, Biochemistry, Chemistry, Mathematics, Microbiology, Physics, Zoology or Agriculture and B.E. or M.B.B.S. or B.V.Sc. of a recognized Indian or Foreign University.

How to Apply : A requisition for an Application and Prospectus, with a State Bank of India challan for Rs. 35/- drawn in favour of Madurai Kamaraj University Account No. 1 or a Crossed Bank Draft drawn in favour of The Registrar, Madurai Kamaraj University, Madurai 21 payable at Madurai should be made. Applications can be obtained in person or by post. **Postal Orders/Money Orders will not be accepted.**

An entrance examination will be held in the month of June 1985. Apart from the Bachelor's degree marks, selected applicants should pass the entrance examination.

The date and place of examination will be intimated later.

The candidates should appear for the entrance test at their own expense.

* Last date for receipt of filled in applications is **10th June, 1985.**

* Late applications will not be accepted.

* The University cannot be held responsible for any delay or loss in postal communications.

P. P. Chinnadurai
REGISTRAR

CLASSIFIED ADVERTISEMENTS

GUJARAT AGRICULTURAL UNIVERSITY

SARDAR KRUSHINAGAR-385506
DISTRICT : BANASKANTHA

Advertisement No. 2/85

Applications in prescribed form are invited for the following posts in the Faculty of Veterinary Science and Animal Husbandry in Gujarat Agricultural University. The candidates who fulfil the qualifications and desire to apply may send their application forms alongwith six copies of authenticated bio-data through proper channel to the Registrar, Gujarat Agricultural University, Sardar Krushinagar-385506, Dist. Banaskantha.

Name of the Post and Pay Scale	No. of posts vacant	Discipline.
1	2	3
1. Professor/Research Scientist. Rs. 1500-60-1800-100-2000-125/2-2500. in addition to other allowances as per State Government Rules.	2	Veterinary Surgery,
	1	Veterinary Medicine,
	1	Veterinary Gynaecology,
	2	Veterinary Physiology
	1	Veterinary Microbiology,
	2	Veterinary Pharmacology,
	1	Animal Nutrition,
	1	Veterinary Pathology
	1	Reproductive Biology,
	1	Livestock Production and Management.
2. Associate Professor/Associate Research Scientist. Rs. 1200-50-1300-60-1600-Assessment-60-1900. in addition to other allowances as per State Government Rules.	1	Veterinary Surgery,
	1	Veterinary Clinic,
	1	Animal Genetics & Breeding,
	1	Veterinary Physiology
	2	Veterinary Pharmacology,
	1	Veterinary Anatomy,
	1	Veterinary Microbiology,
	1	Animal Science.
3. Assistant Professor/Assistant Research Scientist Rs. 700-40-1100-50-1300-Assessment-50-1600, in addition to other allowances as per State Government Rules.	Total 20	Veterinary Anatomy, Clinics, Bio-Chemistry, Physiology, Animal Genetics & Breeding, Livestock Production & Management, Parasitology, Microbiology, Animal Nutrition, Medicine, Surgery, Gynaecology, Animal Hygiene, Veterinary Public Health, Animal Science

Application forms alongwith details regarding qualifications and experience for above posts can be had from the Registrar, Gujarat Agricultural University, Sardar Krushinagar-385506, Dist. Banaskantha on cash payment of Rs. 2/- (Money order will not be accepted) or by sending crossed Indian Postal Order of equal amount issued in favour of "Comptroller", Gujarat Agricultural University, Sardar Krushinagar", alongwith the self addressed envelope (23× 11cm) affixed with Rs. 1-30 paise postage stamps. The last date for obtaining the applications complete in all respect is **29-6-1985.**

The candidates already in the service of this University may also apply through their respective officers in prescribed proforma with six copies of authenticated bio-data without I.P.O. All candidates shall send their application through proper channel. All candidates called for interview will have to attend the same at their own cost.

1. Incomplete applications will not be considered.
2. The University reserves their full rights to fill up or not to fill up any or all the posts and to give or not to give appointment to the candidates selected by Selection Committee.
3. Canvassing in any form will completely disqualify a candidate for employment under this University.
4. Selected candidate for above posts of category is transferable at any campus or centre of the university and between education, research and extension activities/Project.
5. Reservation for Schedule, Tribe, Schedule Caste candidates, Socially and Economically backward classes candidates are also available as per Gujarat Agricultural University rules for the above posts. While recruiting to the posts mentioned above, if persons belonging to the reserved categories who are suitable for appointment are not available or not selected such vacancies shall be filled by Selection of candidates belonging to other categories as per rules in force from time to time. Candidates belonging to Scheduled Caste/Scheduled Tribe/Socially and Economically backward classes (Baxi Commission) are required to produce certificates in the prescribed form issued by the authorities empowered to issue such Certificate in support of their claims alongwith their application.

R.J. Patel
REGISTRAR

GUJARAT AGRICULTURAL UNIVERSITY
SARDAR KRUSHINAGAR-385506
DISTRICT : BANASKANTHA

Advertisement No. 3/85

Applications in prescribed form are invited for the post of Director of Extension Education in the Gujarat Agricultural University. The candidates who fulfil the following qualifications and desire to apply may send their applications with six copies of authenticated bio-data through proper channel to the Registrar, Gujarat Agricultural University, Sardar Krushinagar-385506, Dist. Banaskantha, Gujarat State.

1. Name of Post : Director of Extension Education
2. Pay Scale : Rs. 1800-100-2000. plus usual other allowances.
3. **Qualification and Experience**

Essential

(i) A High Second Class Bachelor's Degree in Agriculture or Dairy or Veterinary Science or Animal Husbandry.

(ii) A Ph.D. Degree OR any other qualification equivalent to Ph.D. in Agricultural Sciences.

(iii) At least 10 years' experience in teaching/and/or Research and/or extension work of which not less than 5 years will be in field of extension.

Preferable

(i) Significant accomplishments in the field of extension education.

(ii) A good knowledge of the educational system prevalent in the world and familiarity with modern concepts of organisation and co-ordination of teaching, research and extension activities.

Age : Below 50 years.

(1) Age relaxable in the case of outstanding candidate and in case of a person already in the employment of the University.

(2) In exceptional case, the requirements of Second Class Bachelor's Degree may be relaxed.

(3) In exceptional case a candidate with degree in any subject of the allied sciences may be considered

(4) Ph.D. Degree relaxable in case of a person having Master's Degree in the subject with eminence as evidenced by published papers of academic excellence in scientific journal or production of important scientific results.

(5) If an employee of the University is appointed to this post, he shall get his pay and pay scale plus Rs. 250/- per month as a special pay but if he continue as officer his retirement age is 58 years.

Application forms and other terms and conditions can be had from the Registrar, Gujarat Agricultural University, Sardar Krushinagar-385506, Dist. Banaskantha, Gujarat State on cash payment of Rs. 2/- (Money order will not be accepted) or by sending crossed Indian Postal Order of equal amount issued in favour of "Comptroller", Gujarat Agricultural University, Sardar Krushinagar alongwith the self addressed envelope (23×11cms.) affixed with Rs. 1-30 paise postage stamps.

The candidates already in the service of this University have to apply through their respective officers in prescribed proforma with six copies of authenticated bio-data without I.P.O. All candidates should send their application through proper channel. All candidates called for interview will have to attend the same at their own cost.

Instructions

1. The last date for receiving applications complete in all respects is **29-6-1985.**
2. Incomplete applications will not be considered.
3. Only those who fulfil the qualifications should apply before time limit.
4. The University reserves their full rights to fill up or not to fill the post and to give or not to give appointment to the candidates selected by Selection Committee.
5. Canvassing in any form will completely disqualify a candidate for employment under this University.
6. The person selected from teacher's cadre in the University can keep his lien his teacher's cadre.

R. J. Patel
REGISTRAR

BANARAS HINDU UNIVERSITY
VARANASI-221005

Advertisement No. 1/1985-86

Applications are invited for the undermentioned post in the Institute of Agricultural Sciences under Dryland Operational Research Project (Mirzapur District) sanctioned by the U.P. Council of Science & Technology.

Application will be entertained on the prescribed form duly supported with a Bank Draft or Crossed Indian Postal Orders of Rs. 7.50 (of Rs. 2.00 for the candidates belonging to Scheduled Castes/Scheduled Tribes category) in favour of the Registrar, Banaras Hindu University towards the application fee. Application forms will be supplied free of cost by the Registrar (Selection Committee Section), Banaras Hindu University, Varanasi-221005 on receipt of Rs. 1.50 paise stamped self-addressed envelope of 23cm×10cm. size. Candidates called for interview for the post will be paid actual Railway fare by the Second Class plus reservation charges for sleeper, if paid, and/or actual Bus fare from the present residence bothways by the shortest route as per University rules. No other expenses will be paid.

Application form alongwith attested copies of certificates and marksheets in support of the qualifications and experience mentioned in the application be addressed to the Registrar (Selection Committee Section), Banaras Hindu University, Varanasi-221005.

Incomplete application in any respect will not be entertained for consideration. Those who are in service should apply through proper channel. M.O. or Cheque will not be accepted towards application fee.

Reservation : A reservation of 22½% (15% SC and 7½% S.T.) will be made in the category of non-teaching posts at the entry level.

The last date for receipt of application in the Office of the Registrar (Selection Committee Section), Banaras Hindu University either by post or by hand will be **31st May, 1985.** Applications will be received by hand at the counter only up to 2.30 P.M. on each working day. No application shall be entertained after the last date from external, in service employees and the candidates residing abroad.

Note : Number of vacancy is tentative and can vary according to needs.

1. Subject Matter Specialist (Agronomy) : (One) (Temporary till the Scheme exists) (Dryland Operational Research Project : Mirzapur District).

Grade : Rs. 700-1600.

Qualifications

Essential

(1) Master's degree in Agronomy or an equivalent postgraduate qualification.
(2) Five years experience of research in the field of specialisation.

Desirable

(1) Doctorate Degree in Agronomy.
(2) Knowledge of modern method of investigation in the subject concerned.
(3) Experience of working in rural area.

BANARAS HINDU UNIVERSITY
VARANASI-221005

(Advertisement No. 2/1985-86)

Applications are invited for the undermentioned posts. The benefit of Provident Fund Pension, Dearness Allowance, House Rent Allowance and City Compensatory Allowances are admissible according to University rules. The retirement age of University employees is 60 years. The appointment will be made on one year probation on all permanent posts. Higher starting salary within the grade is admissible to specially qualified and experienced candidates.

Applications will be entertained on the prescribed form duly supported with a Bank Draft or Crossed Indian Postal Orders of Rs. 7.50 (or Rs. 2.00 for the candidates belonging to Scheduled Castes/Scheduled Tribes category) in favour of the Registrar, Banaras Hindu University towards application fee. For post No. 22 Bank Draft or I.P.O. of Re. 1/- is required towards application fee. Candidates belonging to Scheduled Castes/Scheduled Tribes category have been exempted from payment of application fee for post No. 22 only. Application forms alongwith the detailed qualifications will be supplied free of cost by the Registrar (Selection Committee Section), Banaras Hindu University, Varanasi-221005 on receipt of Rs. 1.50 paise stamped self-addressed envelope of 23 cm × 10cm size. Candidates called for interview for these posts (**except post No . 22**) will be paid actual Railway fare by the Second Class plus reservation charges for sleeper, if paid, and/or actual Bus fare from the present residence bothways by the shortest route as per University Rules. No other expenses will be paid. No travelling expenses will be paid to the candidates called for interview (Except S.C./S.T. candidates) for post No. 22 . Only Scheduled Castes/Scheduled Tribes candidates called for interview for post no. 22 will be reimbursed Second Class Rail Fare or Bus fare chargeable from the shortest route from Railway Station/Bus Stand nearest to their normal place of residence or from which they actually perform the journey whatever, provided that the fare of the first 30 kms in both cases i.e. Rail or Road is borne by the candidates and the reimbursement will be restricted to the fare in respect of the distance exceeding 30 kms bothways.

Applications alongwith attested copies of certificates and marksheets in support of the qualifications and experience mentioned in the application and be addressed to the Registrar (Selection Committee Section), Banaras Hindu University, Varanasi-221005 . INDIA.

Incomplete application in any respect will not be entertained for consideration. Those who are in service should apply through proper channel. Money Order or Cheque will not accepted towards application fee.

Reservation: (1) A reservation of 15% in the case of Scheduled Castes and 7½% in the case of Scheduled Tribes will be made in the category of teaching posts upto the level of Lecturers only. (2) A reservation of 22½% (15% S.C. and 7½% S.T.) will be made in the category of non-teaching posts at the entry level.

The last date for receipt of application in the Office of the Registrar (Selection Committee Section), Banaras Hindu University either by post or by hand will be **5th July, 1985**. Applications will be received by hand at the Counter only up to 2.30 P.M. on each working day. No application shall be entertained after the last date from external, in service employees and the candidates residing abroad.

Note

1. Number of vacancies are tentative and can vary according to needs
2. Panel may be drawn for temporary appointment of Lecturers against future vacancies.

Grade

Professor: Rs. 1500-60-1800-100-2000-125/2-2500.
Reader : Rs. 1200-50-1300-60-1900
Lecturer : Rs. 700-40-1100-50-1600
(N.P.A. - 50% of pay subject to maximum of Rs. 500/- p.m. to Medical Graduates appointed in the Institute of Medical Sciences only).

Other Posts : As indicated against the respective posts.

INSTITUTE OF AGRICULTURAL SCIENCES

1. **Professor of Genetics & Plant Breeding :** (One)
2. **Irwin Professor of Agricultural Sciences :** (One)
3. **Reader in Physics & Mathematics :** (One)
4. **Reader in Agricultural Statistics :** (One)
5. **Lecturer in Agricultural Statistics :** (One)
6. **Lecturer in Physics :** (One)
7. **Lecturer in Mycology & Plant Pathology :** (Spl. in Virology) : (One)

INSTITUTE OF TECHNOLOGY

8. **Professor of Pharmacognosy** (Spl. in Pharmacognosy) : (One)
9. **Professor of Mechanical Engineering)** (Thermal) : (One)
10. **Professor of Mechanical Engineering** (Industrial Management) : (One)
11. **Reader in Mechanical Engineering** (Industrial Engg.) : (One)
12. **Reader in Mechanical Engineering** (Production Engg.) : (Three)
13. **Training & Placement Officer :** (One) (I.T.)
    Grade : Rs. 1500-1800 (likely to be revised)
14. **Technical Secretary to the Director,** Institute of Technology : (One)
    Grade : Rs. 1100-1600 (likely to be revised).

INSTITUTE OF MEDICAL SCIENCES

15. **Reader in Biochemistry** (Reproductive Biochemistry) : (One)
16. **Reader in Skin & V.D. :** (One)
17. **Reader in Kayachikitsa :** (One)
18. **Lecturer in Statistics & Demography :** (One) (under Post Partum Programme - Dept. of P.S.M.)
19. **Lecturer in Dravyaguna :** (One)
20. **Lecturer in Kayachikitsa:** (Panch Karma) : (One)
21. **Lecturer in Kayachikitsa** (Manas Roga and Rasayan Therapy) : (One)
22. **Demonstrator in Basic Principles :** (One) (Temporary for three years only)
    Grade : Rs. 650-710 plus N.P.A. and other allowances admissible under rules.

S. S. HOSPITAL

23. **Store Officer :** (One)
    Grade : Rs. 700-1300.

FACULTIES OF SCIENCE & HUMANITIES

24. **Professor of Zoology** (Cytogenetics/Cell Physiology/Biochemistry) : (One) (under Special Assistance Programme—Dept. of Zoology, Faculty of Science).
25. **Professor of Statistics :** (One) (Faculty of Science)
26. **Professor of Computer Science :** (One) (Faculty of Science)
27. **Professor of Political Science :** (One) (Faculty of Social Sciences).
28. **Reader in Biochemistry** (Spl. in Metabolism, Neuro-chemistry, Membranes or Enzymology) : (One) (Faculty of Science)
29. **Reader in Mathematics :** (One) (Faculty of Science)
30. **Reader in Chemistry** (Physical) : (One) (Faculty of Science)
31. **Reader in Commerce :** (One) (Faculty of Commerce)
32. **Lecturer in Chemistry** (Physical) : (One) (Faculty of Science)
33. **Lecturer in Chemistry** (Analytical) : (One) (Faculty of Science)
34. **Lecturer in Physics :** (Two) (Faculty of Science)
35. **Lecturer in Mathematics :** (One) (Mahila Mahavidyalaya)
36. **Lecturer in Arabic :** (One) (Faculty of Arts)
37. **Lecturer in Commerce :** (One) (Faculty of Commerce)
38. **Lecturer in Dharmashastra & Mimansa :** (One) (Sanskrit Vidya Dharma Vigyan Sankay)
39. **Lecturer in Education :** (Two) (Faculty of Education)
40. **Lecturer in Education :** (One) (Evening College)
41. **Assistant Librarian :** (One) (Dept. of Journalism & Mass Communication (Faculty of Arts)
    Grade : Rs. 700-1600.
42. **Placement Officer :** (One) (Faculty of Management Studies)
    Grade : Rs. 1100-1600.
43. **Case Analyst :** (One) (Faculty of Management Studies)
    Grade : Rs. 700-1300.

CENTRAL LIBRARY

44. **Deputy Librarian :** (One)
    Grade : Rs. 1200-1900

BHARAT KALA BHAWAN

45. **Publication Officer :** (One)
    Grade : Rs. 700-1300.

SHRAMIK VIDYAPEETH UNDER ADULT EDUCATION PROGRAMME OF THE UNIVERSITY

46. **Director :** (One)
    Grade : Rs. 1100-50-1600.
47. **Programme Officer :** (Two-including one for female)
    Grade : Rs. 700-1300.

UNIVERSITY NEWS, MAY 23, 1985 Regd. No. R. N. 7180/63 Post Regd. D(C).1086

BHOPAL UNIVERSITY
BHOPAL

No. 1854/BU/ESTT

Advertisement No. 2/85

Dated : 2-5-1985

Application on plain paper 8 (eight) copies are invited for the following posts so as to reach the Registrar, Bhopal University, Bhopal, on or before **3-6-1985.**

Application should be accompanied with crossed Indian Postal Order of Rs. 10/- in favour of Registrar, Bhopal University, Bhopal for the post of Professor/Reader/ Lecturer / Professor-cum-Director, Correspondence Courses/ University Librarian/Co-ordinator for the UGC Scheme for Coaching Classes for Minority Communities.

Professor

One each in Genetics/Commerce/ Professor-cum-Director, Institute of Correspondence Courses/Zoology (Inland fisheries).

Reader

One each in Microbiology/Commerce/ Regional Planning/Physics/Comparative Languages & Culture (Two Posts) one in Pali/Prakrit and one in Modern Persian/Arabic & in the Institute of Correspondence Courses one each in Political Science/Sociology/Commerce/ Education/English.

Lecturer

One each in Genetics/Computer Science and Application/Law/Psychology/Commerce (Three Posts) Comparative Languages and Culture (Two Posts) one for Sanskrit and one for Persian/ Physics (Two Posts) and in the Institute of Correspondence Courses Education.

Non-Teaching Posts

Senior Scientific Officer : One Post.

University Librarian : One Post.

Co-Ordinator (Temporary) : One Post for Coaching Classes for Competitive Exams. for Minority Communities.

The minimum qualifications and experience for various posts as per UGC guidelines will be as follows:

Professor : An eminent scholar with published work of high quality actively engaged in research. Ten year's experience of teaching or research. Experience of guiding research at doctoral level. **OR** An outstanding scholar with established reputation who has made significant contribution to knowledge.

Reader : Good academic record with a doctoral degree or equivalent published work. Evidence of being actively engaged in (i) research or (ii) innovation in teaching method or (iii) production of teaching materials.

About five year's experience of teaching and or research provided that at least three of these were as Lecturer or in equivalent position.

This condition may be relaxed in the case of candidates with outstanding record of teaching/research.

Lecturer : Doctor's degree or research work of an equally high standard and (b) Good academic record with atleast second class (c) in the seven point scale, Master's degree in a relevant subject from an Indian University or an equivalent degree from a foreign University. Having regard to the need for developing inter-disciplinary programmes, the degree in (a) and (b) above may be in the relevant subjects.

The above are subject to the provisos as given in the UGC guidelines.

Important Note : (i) For the post of Professor in Genetics M.Sc. degree in any subject in the faculty of Life-Science. (ii) For the post of Professor-cum-Director, Correspondence Courses, Master's Degree in the faculty of Arts/ Commerce/Social Science/Education.

Qualification for the post of Lecturer in Education, Institute of Correspondence Courses.

(a) Doctor's degree in Education or research work of an equally high standard and (b) Good academic record with at least second class (c) in the seven point scale, Master's degree in a relevant subject from an Indian University or an equivalent degree from a foreign University.

OR

Doctor's degree in any University discipline or research work of an equally high standard and Good academic record with an M.Phil degree in Education (which may be acquired while in service) from an Indian University or an equivalent degree from a foreign University.

Having regard to the need for developing inter-disciplinary programmes, one of the degree in (a) and (b) above may be in a relevant subject the other being in Education.

The other provisions shall be as given in UGC booklet published in December 1983.

Specialisation for various posts

Professor for Genetics : An eminent scholar with published work of high quality actively engaged in research in the areas of Plant / Animal/Human Genetics **OR** an outstanding scholar with established reputation who has made significant contribution to knowledge in the areas of Plant/Animal/Human Genetics.

Lecturer for Genetics: M.Sc. (Genetics with specialisation in Blood Genetics/ Twin research/Population Genetics.

Professor in Commerce : Specialisation in Banking.

Reader in Commerce : Specialisation in Business Statistics/Management and Co-operation.

Reader in Regional Planning : Master's degree in Economics/ Geography/Regional Planning.

Reader in Physics : Specialisation in Material Science with Laser Physics Ultra Sonic Studies or Experimental Electronics/Semiconductor Devices.

Lecturer in Physics : Specialisation in Solid State Physics with Theoretical Physics Background/Digital and Solid State Electronics.

Lecturer in Law : Specialisation in Constitutional Law and Labour Law.

Reader in Comparative Languages and Lecturer in Comparative Languages : For all the posts in the Department of Comparative Languages and Culture, Specialisation in Linguistics is a desirable qualification. For Reader in Pali/ Prakrit the candidate should be M.A. first or Second Class any Oriental Linguistics with specialisation in Indo-Aryan Linguistics.

Qualification for non-Teaching posts

University Librarian

(a) First or Second class M.Lib. Science **OR** M.A./M.Sc./M.Com. plus a First or Second class B. Lib. Sc. or Diploma in Library Science.

(b) At least ten years experience as Librarian or in a responsible professional capacity in a University Library.

(c) Ph.D. degree or equivalent research work in the field relevant to the profession.

(d) In certain situations in academic libraries, training in Computerization/ Information Technology/Specialised areas may be taken into consideration.

Co-ordinator : For Coaching Classes for Competitive Examinations for Minority Communities (Purely Temporary.) This can be terminated at any time.

Qualifications : At least Second class Master's degree with five years teaching experience to degree/Post graduate classes. Age should not be below 40 years. The organizational qualification will be considered as an additional qualification.

University Service and Instrumentation Centre : Senior Scientific Officer : (One Post)

Qualifications

Atleast 2nd class M.E./M.Tech./ M.Sc Physics with Five Years experience of R&D/Research in Experimental Electronics/Material Science in operation & Maintenance of Modern Instruments. Age limit : 55 years.

General

Good academic record for teaching posts will be determined as per UGC rules. Pay scale and age limit will be as per UGC rules as given below. No TA/ DA/will be admissible to the candidates called for interview. The Selection Committee may consider the candidature of any eminent/suitable person in absentia.

Pay Scale

Professor : Rs. 1500-60-1800-100-2000 125/2-2500.

Reader : Rs. 1200-50-1300-60-1900.

Lecturer : Rs. 700-40-1100-50-1600.

Co-ordinator (Minority Scheme) : Rs. 1100-1600.

Senior Scientific Officer : Rs. 1100-1600.

Librarian : The scale sanctioned by the State Govt. for M.P. Universities and approved by the UGC.

Note : Persons who have already applied with reference to earlier advertisement for the post of Professor Genetics/Professor Commerce/Reader Commerce/Lecturer Commerce and Senior Scientific Officer need not apply.

M.N. Bhouraskar
REGISTRAR

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University News

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JUNE 1, 1985

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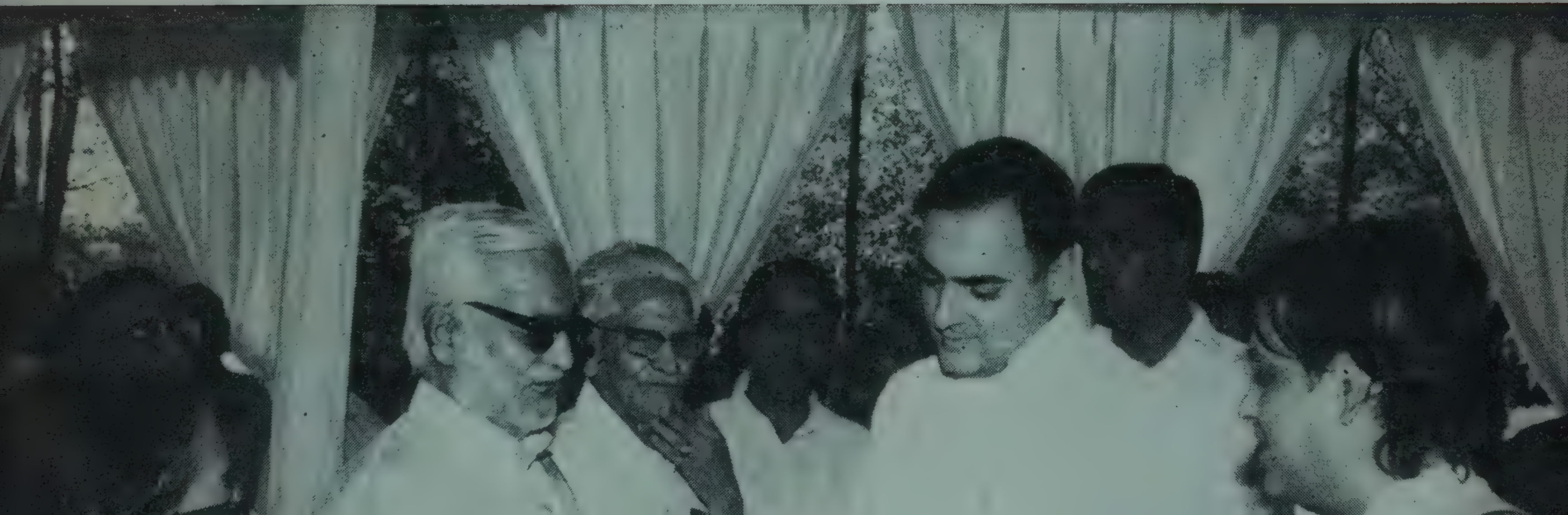

Shri G. B. K. Hooja, Vice-Chancellor, Gurukula Kangri Vishwavidyalaya, Hardwar, presenting to Prime Minister Rajiv Gandhi the Book "World Perspectives on Swami Dayananda" by Dr. Ganga Ram Garg.

CLASSIFIED ADVERTISEMENTS

INDIAN INSTITUTE OF TECHNOLOGY DELHI

HAUZ KHAS : NEW DELHI-110016

Advertisement No. 7/85(R.I)

Announcement for Faculty Positions

(A) **Post** : Professor

(B) **Pay Scale** : Rs. 1500-60-1800-100 2000-125/2-2500 (plus allowances as applicable in Government of India).

(C) **Departments/Centres and Specialisations for which positions will be filled.**

Department/Centre/Specialisations

*1. Computer Services Centre : Planning & Maintenance of Computer Operations, Users Services and Software Development.

2. Department of Computer Science & Engineering : Computer Architecture, IVLSI & Algorithms, System Software Design, Digital Image Processing & Related topics, Computer Communication Networks, Data Base System Design, Computer Aided Design & Artificial Intelligence.

3. Centre for Bio-chemical Engineering and Research : Computer Software development for Bio-processes, On-line Computer Control of Microbiological Systems, Modelling, Simulation and Control of Bio-processes/Bioreactor Design and analysis/Down stream separation/Process development, Molecular biology/Molecular Genetics/ Genetics Engineering.

4. Department of Civil Engineering : Environment/Public Health Engineering

*Applicants for the post of Professor in the Computer Services Centre can also be appointed as Operations Manager in the same pay scale as that of Professor . However, the position of Operations Manager is not academic in nature and the incumbents of that post would not be involved in teaching and research on regular basis.

(D) **Minimum Qualifications/Experience prescribed for Recruitment.**

(a) **For post in the Computer Services Centre:** Good Master's degree in Computer Science/Applied Sciences/Engineering with a minimum of 7 to 10 years experience in a responsible capacity in the fields of Operations, Systems, Users Services and general planning and management of large computers. The applicants should have adequate competence in these aspects of large modern systems as well as sufficient organisational ability for co-ordinating and managing the overall operations of the system to make it a commercially viable proposition, in addition to providing efficient services for meeting the educational research and technical consultancy needs of the Institute.

(b) **For posts in the Department of Computer Science & Engineering and Centre for Bio-chemical Engineering & Research:** An eminent scholar with published work of high quality actively engaged in research. Ten years experience of teaching and/or research. Experience of guiding research at doctoral level.

OR

An outstanding Engineer/Technologist with established reputation who has made significant contribution to knowledge.

Prescribed application forms may be obtained from Deputy Registrar (Estt-I), Indian Institute of Technology, Hauz Khas, New Delhi-110016 either in person or sending by post a self-addressed stamped envelope (size 10×23cms) bearing postage stamps of 95 paise latest by **23-6-1985.** Last date for submission of application forms alongwith crossed Indian Postal Order worth Rs. 7.50 (Rs. 1.87 for SC/ST candidates) is **1-7-1985** in India and **8-7-1985** for candidates abroad.

JADAVPUR UNIVERSITY

CALCUTTA-32

Employment Notification No. A2/C/9/85

Dated : May 13, 1985

The University invites applications in the prescribed form for the following post:

1. Physical Instructor—One post.

Scale of Pay : Rs. 550-30-700-35-770-40-890-45-1160/-

Qualifications

Essential

Graduate plus Diploma/Degree in Physical Education

Desirable

First Class Degree in Physical Education. Proficiency in atleast one major game and experience in organising Sports at University level.

Last date of receiving application is **10th June, 1985.**

Application forms are obtainable from the University Office during working hours on payment of Re. 1/- or on Payment of Rs. 2/- inclusive postal charge. No travelling allowance is admissible to candidates called for interview. Higher initial salary may be given to really deserving candidates. Those who are in employment should submit their applications through proper channel. Choice of the Selection Board will not necessarily be confined to applicants only. Canvassing in any form will disqualify a candidate.

REGISTRAR

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UNIVERSITY
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Editor :
M. S. RAMAMURTHY

Right To Learn

Unanimously adopting a declaration on the "right to learn" more than 840 participants including delegates representing 122 member states of UNESCO who assembled for the Fourth International Conference on Adult Education from March 29, 1985 at the headquarters of UNESCO in Paris, said that "without it there can be no human development". Right to learn must be recognised as a fundamental right, for it "changes human beings from objects at the mercy of events to subjects who create there own history".

Taking stock of the progress made in Adult Education the conference noted that there has been a marked expansion in adult Education in recent years the world over. For example, one out of every five adults in Canada is enrolled in further educational courses. In Sweden a third of the population between 18 and 65 follows popular education courses. In Japan 70 per cent of the working population, nearly a third of them women, are involved. In China by making literate in a few years more than 1.5 million adults, the illiteracy rate in 1982 was brought down to 23 per cent. In Kenya the member of adults taking courses this year will be 350,000, 80 per cent of them women. Between 1983 and 1984, 4.1 million adults took training at 11,300 institutions in USSR. In Cuba one out of every three adults is taking courses which mean 3.2 million out of a total population of 10 million. Between 1980 and 1984, Mexico brought down its illiteracy rate from 16 per cent to 12 per cent. In Zimbabwe, adult education courses have enrolled 380,000 people, 60 per cent of their women.

The conference provided an occasion for some deep thinking about the tasks of adult education and means for achieving the same. A package of recommendations were made by the conference which laid down guidelines for the evolution of adult education. They were mainly concerned with the aims and politics of adult education, use and transfer of appropriate, low-cost and innovatory technologies, training of adult educators, relations between adult education and traditional training, and illiteracy and the drop-back illiteracy now affecting industrialised countries, as well as international cooperation, the contribution of adult education to development and the exchange of information.

From the debate on International cooperation it emerged that participants considered that it was a major factor for understanding and peace in the world. In this context many felt that regional cooperation was the most favourable form.

Further, the conference stressed the urgent need for research and experimentation to develop approaches to using mass communication such as radio, TV and computers.

Summing up the results of the conference, the Director-General of UNESCO declared that participants had considered that "for adult education to play its full role as a factor in the democratization of education and of society, it must continue to be inspired by a concern for equity". □

Education for All : Dimensions and Dilemmas

S. N. Saraf*

Elementary Education

One major programme, under the overall banner of "Education for All" is elementary education and the other is adult education. Article 45 of the Constitution of India, stipulated that "the State shall endeavour to provide within a period of 10 years from the commencement of this Constitution, for free and compulsory education for all children until they complete the age of 14 years." During the first 15 years of educational planning, when the going seemed to be good on almost all the fronts, growth in gross enrolment ratio was extremely good, though it did not conform to the target of Article 45 of the Constitution. This is obvious from Table 1.

Table 1

Gross Enrolment Ratios (G.E.R.) for children in the age-group 6-11, 11-14 and 6-14 (1951-85)

	Year	Age-group 6-11	Age-group 11-14	Age-group 6-14
	1	2	3	4
First Phase	1950-51	42.6	12.7	32.0
	1955-56	52.9	16.5	40.0
	1960-61	62.4	22.5	40.5
	1965-66	76.7	30.0	61.1
Second Phase	1970-71	78.6	33.4	62.6
	1973-74	80.3	33.2	63.6
	1978-79†	83.2	36.9	65.9
Sixth Plan	1979-80††	81.9	30.4	65.3
	1984-85 (Tar.)	91.0	51.0	76.0
	1984-85 (Est.) (Ach)†††	88.8	49.3	74.0

† End of Fifth Plan

†† Selected Educational Statistics: 1980-81, Planning Monitoring & Statistic Division, Ministry of Education, New Delhi, 1982. The Year 1979-80 is the beginning of the Sixth Plan.

††† This also assumes 2.16 crores additional children in the Sixth Plan which may not be achieved. Perhaps the additional enrolment may be 1.6 crores both in formal schools and non-formal classes and the gross enrolment ratio may be round about 69 or so.

The moment gross enrolment ratio reached nearly 60 percent in 1965-66, the growth rate nearly stagnated. In a thirteen year period it increased by mere 4.8 percent, from 61.1 percent in 1965-66 to 65.9 percent in 1978-79 and the actual G.R.E. in 1984-85 may be around 69 percent. In other words, increase would be 13 percent or really speaking 8 percent over a period of nearly twenty years!

Most probable explanation is that the phenomenon of the 'resistant-to-education group' started operating as soon as 60 percent gross enrolment ratio was achieved. In other words, the moment it was sought to extend elementary education facilities to the population below the poverty line, the main rub started. The assumption that only "the last 5-10 percent of students remaining to be enrolled will be most difficult to secure" is generally correct in a developed economy. The "resistant-to-education group" mostly belonging to poorer section of the population form 30-40 percent and that is why generally in developing countries the enrolment curve, after reaching 60-65 percent enrolment ratio, becomes almost flat. It takes many many years to reach 90 percent enrolment ratio. The hard core is that 40 percent of the elementary education age-group belong to population below the poverty line. Policies and plans tend to overlook this important dimension.

Gross enrolment ratios are not attendance ratios. As the general experience goes, if computed on the basis of scientific surveys, attendance ratio could be atleast 10 to 15 percent less than the gross enrolment ratio. A safe estimate of children attending classes I-VIII in 1984-85 could be around 10 crores representing gross enrolment ratio of 69 percent or so. In fact for realistic planning, there is need for developing an index of "attendance ratio" as well.

A sobering warning is that at the current rate of development the achievement of universal elementary education even by the year 2001 will be a distant dream. In 1980 out of total population of 13 crores in the age group 6-14, less than 9 crores were enrolled and 4.3 crores (or 32 percent) were out of school. As stated earlier, in 1985 out of the total population of 14.8 crores in the same age-group, at the most, 10.97 crores may be enrolled leaving 3.8 crores (or 26 percent) still not enrolled. The number of children attending would be far less. As with the increase among illiterates, the number of non-enrolled children has not been decreasing appreciably. With this stark reality, is it ever possible to achieve universal elementary education even by 2001 when the population in the age-group 6-14 may reach a 20 crore mark ?

For the Seventh Plan, the estimate is that the additional enrolment at the elementary stage, in formal classes, would be 2.5 crores and that an additional 4 crores children would be enrolled in non-formal classes to achieve cent percent enrolment by 1991. Firstly, the target of enrolling 2.50

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* *Visiting Consultant, National Institute of Educational Planning and Administration, 17-B Sri Aurobindo Marg, New Delhi-110016. Opinions expressed in this article are personal.*

crores additional children in formal classes during the Seventh Plan may not be achieved as the average annual additional enrolment now is only 30 to 33 lakhs and, at best, 1.5 crore children may be enrolled. Thus the challenge beyond the Seventh Plan i.e. after 1998 would be more severe. Secondly apart from the impossibility of achieving these targets within a period of five years, elementary education, which undoubtedly is a high priority area, cannot hope to be allocated the order of resources which are visualised to achieve these targets.

Between 1985 and 2000, assuming that the target will have to be achieved by the end of the Century, additional 9 crore children will have to be enrolled. The additional children to be enrolled annually would be 6 million as against the existing annual rate of 3 million enrolment. The doubling of the enrolment would just not be feasible even if it may be desirable.

That non-formal education could perhaps be one of the most important strategies for getting children of the poorer sections to be educational stream may not be tenable for several reasons. First, the figure is too high, nearly 6 to 7 crores. Second, the reality of the situation is that two parallel paths, one for the non-poor group and the other for the poor group, cannot reach the same goal because the inputs are different and the pace is not even. Therefore, even by the end of the Tenth Plan, that is the year 2000, we will not have achieved the Constitutional directive laid down half a century back. Could there be a better and lasting alternative?

Educational and economic development programmes are interlinked. The economically backward districts in all the States and economically backward States also happen generally to be educationally backward districts and States. Resource mobilisation in these economically backward districts and States for education and particularly for elementary education present a real constraint. If the provision for the educational infrastructure is made in the traditional manner, the intended beneficiaries would not be able to derive the benefits because of inbuilt constraints. To meet this situation, especially the needs of the backward areas and classes in all the States, the concept of "minimum needs programme", covering various facts of development was conceived. This has now been incorporated very boldly in the 20-point programme. The intensive development of the backward areas, aspecially about 200 odd districts, which have the lowest gross enrolment ratios, miserable literacy rates and are economically backward as well through the minimum needs programme and 20-point programme can make a real dent on the overall problem of poverty and thus help in accelerating growth in enrolments and increase in literacy. An impact on removal of poverty will start a chain reaction which will make a dent on other problem areas. Establishing a school in a rural area without a road, supply of safe drinking water, provision of electricity, housing for teachers etc., will have no meaning. This needs to be mentioned in the National Education Policy in clear terms.

Further, should the new National Educational Policy repeat what has been mentioned in various earlier Policy and Plan documents or observe facts as they are and, on the basis of realistic estimates of feasibility and availability of resources, indicate realistic targets? This would be a bold step which should be taken; otherwise laying down high targets and achieving low, creates a credibility gap. Should we not insist on laying down school-wise targets in terms of increases in (a) retention ratio, (b) attendance ratios, and (c) additional enrolment? For the districts and States, the fourth index, namely gross enrolment ratio, can be added.

The concentrated effort should be on the indentified districts. The backward States and backward districts in all the States bring down the average norms. This should clearly emerge in the proposed National Education Policy. The NCER&T, as the apex organisation at the national level, has to act as the Technical Adviser in the identification of the problem areas, suggesting concrete action programme and providing technical assistance.

Further, the plea is that, as far as possible, inclusion of statements arousing hopes and expectations and of a general nature in the National Education Policy should be avoided. While long-term policies could be mentioned, side by side, short-term feasible policies and plans should also be indicated.

Adult Education

After and analysis of the situation, as far as it relates to Elementary Education, let us have a look at the other side of the coin of Education for all — Adult Education. The nation has become insensitive to the harm which illiteracy has done and can do. It is not therefore, surprising that the growth of literacy, after Independence, has been rather slow; population explosion, virtual non-existence of literacy programmes, ineffectiveness of primary education have been the major reasons.

The Sixth Plan stipulation that 110 million illiterates in the age-group should be covered under literacy programmes by 1990 may not be achieved. The growth of literacy till 1981 and projections till 2001, on the basis of accelerated growth rates, is indicated in Table 2.

Table 2
Growth of Literacy

S.No.	Year	Total Population	Percentage of literates
1	2	3	4
1.	1951	35.6	16.1
2.	1961	44.5	24.1
3.	1971	54.8	29.4
4.	1981	68.3	36.1
5.	1985*	76.6	38.0
6.	1991*	84.0	43.0
7.	2001*	100.0	56.0

*Estimates

In other words, even by 2001 out of 100 persons, 44 are likely to be illiterates if no major miracle happens during the next fifteen years. But this mass of illiterate population in 2001, round about 44 crores, would be sort of an anachronism. The absolute number of illiterates has been increasing; from 30 crores in 1951 to be about 44 crores in 2001. The position in the age-group 15-35 may be slightly different but, for purposes in international comparison, the overall literacy figure is the recognised index.

Millions have suffered and will continue to suffer the indignity of illiteracy and their numbers are growing. Authentic studies have proved, in clear and unambiguous terms, that these millions are the poor, the deprived, the backward, the socially weak and depressed, who are below the poverty line and have been 'left-outs'. There are also indications that geographical distribution of illiteracy in India is practically coterminus with the areas which, by and large, are under-developed, poverty-stricken, and have minimum gross enrolment ratios at the primary stage. For instance, the States of Andhra Pradesh, Assam, Bihar, Jammu & Kashmir, Madhya Pradesh, Orissa, Rajasthan and Uttar Pradesh have per capita domestic product below the national average. It is no intention to claim that the low rate of literacy is the cause of low S.D.P. but perhaps it could be argued that it is one of the factors.

The dual dimension of low enrolment ratios going side by side with low literacy ratio can be understood in the wider perspective of poverty and population dilemma. They are inter-inked. An audicious development of elementary education is not only relevant to the task of achieving the goals of universal elementary education alone. It is closely related to the campaign against illiteracy as well. One significant reason which policy-makers have to note seriously is that, after reaching the gross enrolment ratio of 60 to 70 as indicated earlier, the growth curve tends to slow down considerably. It is here that adult literacy helps to change the milieu in favour of non-enrolled children and drop-outs who may otherwise go on adding to the ranks of illiterates and the vicious circle will ever grow. The other correspondence between the two is provided by the fact that greater the retention rate of the elementary schools, lesser will be the incidence of illiteracy. The retention rate, during the first two decades of planning, increased by mere 5.7 percent from 31.1 percent in 1950-51 to 36.0 in 1970-71.

The Education Commission, 1964-66, had correctly forecast that with absolute dependence on compulsory and free elementary education alone for the liquidation of illiteracy, "we may not reach our goal even by 2000 A.D." It was recommended that "while our efforts to develop a programme of free and compulsory education should continue with redoubled vigour, a time has come when a massive and direct attack on illiteracy is necessary".

The Education Commission, 1964-66 pleaded for "a massive and direct attack on illiteracy". It referred to a determined mobilisation of all available educated men and women in the country to constitute a force to combat illiteracy and an effective organisation and utilisation of this force. This approach, according to the Commission was unorthodox but not untried. In this connection they approvingly referred to the mass approach adopted in the USSR and Maharashtra under the Gram Shikshan Mohin (Village Literacy Movement) in the following words :

> "The mass approach was remarkable success in the USSR. In a different way and on a smaller scale this approach was attempted in Maharashtra through the scheme of Gram Shikshan Mohim. The Mohim exploited the local village patriotism to eliminate illiteracy from the village and required the teachers, all local educated men and women to work for literacy. The scheme cost very little and its gains were much more than what could be measured in terms of literacy. Its critics have referred to certain inadequacies in the preparation of Mohim and to weaknesses in the follow-up work. These defects can be removed".

The Gram Shikshan Mohim programme was commended by the National Board of Adult Education in its meeting held on May 4, 1970 and it was recommended that this pattern should be considered for adoption with local variations. The Gram Shikshan Mohim achieved its limited purpose adequately. The increase in literacy in Maharashtra between 1961 and 1971, the period during which the Mohim was organised, was about 9 per cent as against 5 percent for all India. The Unesco, impressed by the excellent work done under this movement, though belatedly but appropriately, announced the then prestigeous Mohammed Raza Pehlavi Prize for 1972 to the Gram Shikshan Movement for eradication of :

> "Illiteracy completely in 36,693 villages and hamlets, where it brought literacy to 45,00,000 men and 52,00,000 women, giving them a sound basis of knowledge going beyond the level of elementary literacy training, a desire to continue their education and training and the means of doing so". (Given on next page)

This is a part of the Unesco citation. The full citation is quoted below.*

What happened during the last 34 years in this specific field is a long story. Fundamental Education was talked about for while, social education was a fashion at one time—it appeared, disappeared and reappeared. Came special education for some time. Then non-formal education caught imagination for sometime; name-plates were changed overnight. Came the Farmers Functional Literacy Programme with the U.N.D.P./U.N.E.S.C.O. euphoria, later on dropped the word 'Farmers';

was later on fully dropped and replaced by National Adult Education Programme (N.A.E.P.) which also disappeared after a great fan-fare of over two years. But adult education and adult literacy—the programme for the masses—marked time ? This has to stop now.

The policy-makers have to pause and ask the question whether, within the constraint of resources it would be possible to make nearly 9 crores of illiterates in the age-group 15-35, target laid down in the Sixth Plan, literate by 1991, when the average cost of attaining literacy per adult would be around Rs. 200. This will roughly cost Rs. 1800 crores? This will just not be available. Should the proposed National Education Policy still state that eradication of illiteracy is a must without emphasising equally and urgently the need for mass approach, with less emphasis on monetary inputs and greater reliance on community support for physical inputs, the Government contribution towards technical support of training, preparation, production and supply of materials etc. and the educated youth and adults for direct participation. This calls for a radical strategy with hard options. Now or never; otherwise the Education Commission's forecast may turn out to be prophetic. The National Directorate of Adult Education has to be technically strengthened, invested with authority in order to assume the role of a nodal agency. The experiences of other developing countries, which have attacked the problem of illiteracy with determination, have to be tried out in our country.

Perhaps, the phrase, rather innocently included in the National Policy on Adult Education, issued by the Government of India in 1970, that "the illiterates and the poor can rise to their own liberation through literacy, dialogue and action", has frightened many an enthusiast. After seven years, and even with some investments, the progress of literacy has been slow; no one has been liberated, nor is there any dialogue, nor any action! Such phrases, even if used in future, should be paraphrased and converted into action programmes which will be understood and implemented. ☐

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*"*Having examined with the greatest attention the application submitted and having concluded that* 23 *meet the requirements of the General Rules and fully correspond to its criteria. Have unanimously decided, on the one hand, to award the Mohammad Raza Pahlavi Prize for* 1972 *to the Gram Shikshan Mohim (Movement for Village Literacy) of the State of Maharashtra, India, which, despite the manifold handicaps and difficulties faced by this country, managed between* 1961 *and* 1972 *as a result of unflagging efforts and the enthusiastic co-operation of the people, to eradicate adult illiteracy completely in* 36,693 *villages and hamlets, where it brought literacy to* 45,00,000 *men and* 52,00,000 *women, giving them a sound basis of knowledge going beyond the level of elementary literacy training, a desire to continue their education and training and the means of doing so.*"

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Prof. S. M. Tiwary
Director
Ex-Head & Dean, Faculty of Management Studies, B.H.U.

Dr. Sanjeevi Rao Addresses Convocation of Anna University

Excerpts from the Convocation Address delivered by Dr. M.S. Sanjeevi Rao, Chairman, Electronics Commission, Govt. of India, at the Anna University, Madras.

"...Over the years an enormous investment on development of scientific and technical manpower has been made in our country. Many infrastructures have also been created. This has paid up good dividend in terms of self-reliance in many fields. It has given us self-confidence to look into future. However, you will agree, in spite of all these achievements we still need and continue to need external assistance for technological system in our development activities. In other words while we are trying our best for up-dating the technology and modernising the same, in spite of enormous investment over the last six Five Year Plans, we find that our dependence on external assistance for development of technology is not that insignificant. True, a country can never be completely self-reliant in each and every field. But time has come for the scientific and technical community to have some introspection in this respect. I am touching upon this point because science and technology is progressing at such a tremendous pace all over the world that if we are not in a position to keep ourselves reasonably in race with this competition on our own strength, there will be disaster for the country. Question arises — is it always necessary to keep up with high technologies which are being developed in other parts of the world? To this my answer will be — to what extent our country may suffer in case we do not do so? In other words, we should be in a position to visualise the nature of change that this technology of future can bring in the quality of our life and nation.

I deal with electronics. "I shall therefore, give an example from this field. Take for example, "Telematics". Telematic is a word coined from "Telecommunication" and "Informatque". In simple language it is the science of collecting, processing of information and the providing access to it so that meaningful decisions can be made. Not only that, this information can be sent over a distance within a very short period of time. This collection, processing and storing of information is done by computers or a network of computers connected by communication links and lines. Basically 'Telèmatics', therefore, means a network of computers of various types and sizes of different characteristics connected together to form an integrated network to which data can be fed from any point and can be accessed from many other points. One can visualise that in the years to come the job of a postman can be done through this computer network. Your domestic television receiver can have access to large computer with information on various items. This could relate to History, Geography, Politics, Current Affairs, Railway timings, Aeroplane timings, latest weather information so-on and so-forth. Similarly, your postal mails can be "delivered" in the screen of your television, provided there is a communication network. Can you visualise what all these can lead to? Education system and its nature can change. There may not be necessity of conventional library with huge space for storing books. Already in some countries (for example in France) Computerised Telephone Directory is in use. They say, by doing away with one paper Telephone Directory they are saving one tree and hence ecology. But what is most important is that due to this instantaneous transportation of information, decision making capacity is increased and as a result quality of life is vastly improved...

"The point that I am trying to make out is that it will be disastrous to assume and to interpret that the technology being developed in different parts of the world today may not have relevance to our country. One cannot remain insulated from such development. One has to take note of it and prepare oneself to meet the challenge and situation. We engineers and technologists should be in a position to ask ourselves questions such as — what is the next modernisation? A decade from now what type of change would we need? How should we design and structure that change? What is the infrastructure required for such change and how shall we meet the challenge. The problem of our engineers and technologists in our country is that they are individually brilliant and may be doing good work here and there. But our culture and temperament so far have not developed into a situation whereby we can ourselves as a group identify a scientific development and lead it to an industrial application of our own. Again drawing example from the field of electronics, there is no example of product development similar to VCR, Flat Screen TV, not to speak of such examples as ICs.

"We should be in a position to develop skill to generate an entirely our own innovation from the stage of concept to a useful technology upto shop floor level. This can happen if there is proper coordination among various groups involved in nation building. These forms may be any of the following:

(a) Policy Making Group
(b) Scientific Group
(c) Technologist Group
(d) Entrepreneurs and Business Group
(e) Financial Management

and Economic Group

(f) Educational Centres so-on and so-forth.

"Development and management of technology will be an integrated work of the above groups.

"As I said, I deal with Electronics. I will tell you how we in Government are trying to remain in this technological race of electronics. But before I do so I would remind you that because of historical reason base of electronics, India is very small compared to world standard. Still, over the last decade significant progress has been made not only in terms of value of production but in diversity of product range, applicability in vital and strategic areas. The product range consists of, apart from simple items of consumer electronics, sophisticated items like Communication and Broadcasting equipments, Aerospace and Defence equipments, Computer and Control equipments. We are also exporting. Last year production was for Rs. 1,360 crores (13% above that of year before). This year (1984-85) the production is expected to be around Rs 2,000 crores. We are planning for Rs 10,000 crores in the terminal year of 7th Five Year Plan (1989-90). Today time has come when we must look beyond our immediate technological need and be able to plan for the future for self-reliance. In electronics, three areas are vital for this — Computer, Communication and Microelectronics. To this must be added the issue of adequate manpower.

"In order to become self-reliant to the extent possible, Government has initiated some important projects. Some of these are:

(i) Centre for Development of Telematics (CDOT).
(ii) Semiconductor Complex Ltd. at Chandigarh.
(iii) Setting up of Main-frame Computers.
(v) A Computer Network known as INDO-NET.

CDOT

"The country has embarked on a major programme for the manufacture of Electronic Switching System with the establishment of two factories, each with a capacity of 0.5 million lines. It is essential that the country establish a base for technology development in this field which can be totally our own system. With this aim and objective in view a Centre has been set up to develop within three years a totally indigenous Electronic Switching System. The scope of this has been enlarged to cover the technology what is known as Telematics today. This Centre is known as Centre for Development of Telematics. In short CDOT.

Semiconductor Complex Ltd.

"The heart of electronics equipment today is the integrated circuit. I need not dwell upon the importance both technical and economic on this subject as it is already known to you. However, this is a very sophisticated and complicated technology and needs huge investment. Realising the importance of microelectronics in our country, a unit with an investment of more than Rs. 500 million has been set up in Chandigarh. This Semiconductor Complex is already in production of LSI/VLSI with 5 Micron Technology. Design and other development facilities have been set up to develop a process whereby within about two years they will be in a position to manufacture integrated circuits with 1.5 Micron Technology.

"In order to continuously monitor the development and progress in this field and to take suitable necessary action, a High Power Committee has been formed by the name of National Microelectronics Council.

Main-frame Computers

"Production facilities for Mini and Midi Computers have already been established in the country. Last year production of computer products was worth Rs 78.00 crores. However, for the large computer systems we do not have the requisite technology. Process is under way to set up such mauufacturing facility for Main-farme Computers with assistance from some foreign companies.

"Government has also embarked upon an ambitious scheme to set up a Network of Computers throughout the country. With this transfer and exchange of scientific and technical data and information will be easier. Known as INDO-NET project, initially this will link the major cities. Later on most of the important town and cities will be integrated to this system. INDO-NET is an integrated information management and distributed data processing facility spanning the entire country. It is a stage towards revolutionising data processing in India. When completed, (to start with in Delhi, Calcutta, Madras and Hyderabad) INDO-NET will provide local computing facilities to small and medium scale sectors, highly specialised software in areas of engineering design, structural analysis and management science which professional organisations may share and sophisticated diversified system for developing software for export. This is being implemented by CMC.

Man Power Development

"Our plan and programme for technology development will be of no effect unless there are enough trained manpower to take care of such facilities. Government of India through Electronics Commission and Department of Electronics has initiated a number of schemes for development and sustenance of technical personnel in critical and vital areas of electronics. Most important programme that comes to my mind is introduction of various courses in computer science and technology, computer application so-on and so-forth in various Universities, Colleges and Institutions. In order that our people can develop a culture of electronics from the early stage of our life, we have undertaken a programme for computer education from the school level itself. Initially 250 schools have been covered.

Very soon we expect to increase this to 650 schools.

Since academic institutions are intimately connected with these programmes, I shall give some detail in this respect.

(i) Teachers Training Programme is being initiated at five institutions.

(ii) Master of Computer Application programme has been initiated in 14 centres.

(iii) 28 centres have been identified for starting one-year Post-B.Sc. Diploma in Computer Application, out of which 17 centres have started this course.

(iv) 18-month Post-Polytechnic DCA Programme is being planned for introduction in Polytechnics. This programme has been introduced at 16 centres.

(v) Training Course in the Industrial Training Institutes (ITIs) in two trades — "Console Operator-cum-Programmer Assistant", and "Data Preparation Assistant", has been finalised. Funds have been released to 13 centres to enable them to start this course next year.

(vi) The Master's programme in electronics is expected to be started in three Universities next year. In addition to the traditional Maths, Physics and Chemistry combination available now at B.Sc. Degree level, the introduction of Electronics as separate subject in different combination has also been finalised.

(vii) Continuing Education Programme at IIT, Delhi :

The programme aims at providing modular courses of short duration to professionals from industries and teachers from academic institutions. 60% of the seats are reserved for teachers. The programme has already been started in December, 1984.

(viii) Teachers Training Programme for DCA:

This programme has been initiated at six institutions across the country. Training for teaching DCA courses is provided through 4 modules of six weeks duration each. The programme has since been started.

"These are only a few of the projects and programmes in the critical areas of electronics I have mentioned to you. There are many more which are under implementation.

"I have mentioned about some of the important areas of electronics where we are trying to keep ourselves abreast with the latest development in the world. In other fields of science and technology, I am sure, similar assessment and exercises are being carried out by our Scientists and Technologists. Some of the important fields that are coming to my mind at the moment are — Optical Fibre specially for communication, development of laser technology for high energy industrial application, electronics for medical and agricultural applications so-on and so-forth.

"So far I have tried to say the following:

(i) Our engineers and technologists should be in a position to visualise the change of technology that may take place during the next decade or so. Speculate the same and what is important is to develop a technology which will be suitable for production and ultimately consumption by its masses.

(ii) This change of technology and adoption of higher technology has very much relevance whether it is a rich country like USA or a poor country like ours, the reason being that nature of the technologies is such today that we cannot remain insulated from the same..." □

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Graduates with Economics/Sociology/B.Sc., in Rural Development Science/B.A. in Rural Services/Diploma in Rural Services/Political Science, Public Administration in I or II class are eligible to apply.

ADMISSION QUALIFICATION FOR ITEM NO. 6

Candidates who have passed B.A. in Rural Services/Diploma in Rural Services with Co-operation and Economics as optional subjects B.A. with Co-operation/B.Com. with Co-operation/B.Sc., (Agri.) of other recognised Universities in first or Second class are eligible to apply.

ADMISSION QUALIFICATION FOR ITEM NO. 7

1. First or Second class Graduate teachers who are teaching English at the High Schools or Higher Secondary Schools.
2. Graduate in English with a minimum 45% marks in the aggregate.
3. Any graduate who has secured atleast 50% in Part II English.

ADMISSION QUALIFICATION FOR ITEM NO. 8

1. B.A. students with I or III Part Tamil, B.Sc., students with I part Tamil and B.Litt. students are eligible for admission.

III. DEGREE COURSES

Three Year B.A./B.Sc. Degree Courses
B.Sc. Degree in Home Science

Medium of Instruction: ENGLISH

B.A. Degree Courses

1. Development Administration
2. Rural Industries and Management & Economics
3. B.Cop. (Bachelor of Co-operation)

B.Sc., Degree Courses

4. Mathematics with Physics & Chemistry
5. Physics with Chemistry & Mathematics
6. Chemistry with Physics & Mathematics or Physics & Biology
7. **B.Sc., Home Science: (Only for Women candidates)**

Admission Qualifications: Candidates who have passed Higher Secondary Course/Pre-University Course/Pre-Degree Course or its equivalent in the concerned subjects are eligible to apply.
For B.Cop. Degree course, Economics, Commerce, Accountancy and Audit should be the subjects of study.

IV. TWO YEAR DIPLOMA COURSE IN AGRICULTURE

Medium of Instruction: TAMIL

A pass in Higher Secondary Examination with Biology as one of the subjects or Vocational Course in Agriculture is the Minimum Educational Qualification prescribed for admission.

Candidates who have passed P.U.C./P.D.C. Examinations with Biology as one of the subjects under Part III are also eligible for admission.

Certificate holders of Gandhigram Rural Institute and Shri Ramakrishna Mission Vidyalaya, Coimbatore are eligible for admission into the Second year of the Diploma Course.

V. ONE YEAR CERTIFICATE COURSE FOR SANITARY INSPECTOR

Medium of Instruction: ENGLISH

Candidates who have passed the Higher Secondary Examination of Tamil Nadu or its equivalent having eligibility for University study with following subject can apply.
Group 'A' (Science and Humanities) under Part IV Biology or Botany or Zoology, with Physics, Chemistry and any one of the following subjects as the fourth subjects.

1. Mathematics
2. Environmental Studies
3. Sociology
4. Psychology

(OR)

under group 'B' (Vocational Courses), one of the following subjects must be chosen under 'Health'

1. Medical Laboratory Assistant
2. Dental Hygienist.

The Admission is restricted to candidates who are between 17 to 21 years of age as on 1st July of the year of admission and can be relaxed upto three years in case of S.C. and S.T. candidates.
Admission is open to both men and women candidates for Courses I, II, III (for M.Sc., Home Science and B.Sc., Home Science only Ladies), IV course V is open only to men. The completed applications should reach the Registrar not later than **20 days** after the date of publication of the results of M.A./M.Sc./B.A./B.Sc., Rural Services/Economics/Sociology/Higher Secondary Examinations/Pre-Degree.
Application forms with Prospectus can be had from the Registrar, Gandhigram Rural Institute, Gandhigram-624 302, Madurai District, Tamil Nadu on requisition by sending a money order or Demand Draft obtained from any one of the Nationalised Banks for Rs. 15/- for items, I and II and Rs. 10/- for items III, IV and V payable to the Registrar, Gandhigram Rural Institute, Gandhigram. The name of the course for which the application is needed should be clearly indicated in the requisition.
Application forms can also be had from the Institute's Office at Gandhigram between 9.30 A.M. and 2.00 P.M. on all working days.

Dr. T. R. Subramaniam
REGISTRAR

National Symposium on Human Rights Teaching at JNU

A National Symposium on Promotion of Human Rights Teaching at University Level was held at Jawaharlal Nehru University from 9 to 11 May, 1985. The three-day symposium, which was inaugurated by the Chairman of the University Grants Commission, Dr. (Mrs.) Madhuri Shah was held to exchange information about human rights teaching at various universities. The three-day deliberations provided an opportunity of interaction among academics, jurists and journalists to explore the possibility of adding human right perspectives in the existing curricula of various disciplines in the Universities.

The symposium was convened by the Human Rights Teaching and Research Programme at JNU in collaboration with the Indian National Commission for UNESCO, Ministry of Education. Academics from 22 Universities besides a number of human rights activists including. Mr. Badruddin Tyabji, Mr. V.M Tarkunde and Mr. L.M. Singhvi participated.

The symposium **inter-alia** recommended step-by-step introduction of compulsory courses in all the disciplines of social sciences, humanities as well as natural sciences, re-structuring of the course content of the existing curricula with a view to incorporate human rights perspective in all the disciplines. Other recommendations adopted include introduction of programmes for co-curricular and extra-curricular activities, for promotion of human rights education as also field work and community development projects to be undertaken by under-graduate students.

Since the question of formulation or revision of curricula is a matter for decision of the competent bodies of the respective universities, the symposium confined itself to spelling out broad, but wide-ranging, guidelines and recommendations for consideration by various universities. It has also been recommended that a workshop of teachers drawn from various disciplines should be organized in near future to draft some model curricula for various disciplines and that as far as possible Documentation Centres should be instituted in each university to help promote easy access to teaching and reading materials.

Earlier, in her inaugural address the Chairman of the University Grants Commission, Dr. (Mrs.) Madhuri Shah called for various efforts for the promotion of Human Rights education in the country at all levels of education. Expressing concern over the denial of human rights in many areas of the world, she said that in some parts people continued to face the agony of racial discrimination. They were still being denied opportunities not only in the political, economic and social fields but also in the matter of imparting education.

Welcoming Mrs. Shah, the Vice-Chancellor of Jawaharlal Nehru University, Prof. P.N. Srivastava, emphasised the importance of human rights in all disciplines. He particularly laid stress on the significance of human rights perspective in science education.

Earlier, the Director of the Symposium, Prof. K.P. Saksena recalled various efforts which led to the institution of Documentation-Information Centre for Human Rights Teaching and Research at JNU in December, 1983. He said that the main objective for the Symposium was to exchange experience and information about human rights teaching at under-graduate level in various universities.

Ravishankar Varsity seminar on computer appreciation

A two-day Seminar on "Computers : An Appreciation" was organised by the Department of Physics, Ravishankar University, Raipur jointly with the Regional Sophisticated Instrumentation Centre (RSIC), Nagpur University, Nagpur. On the first day the audience consisted of academicians, students, research fellows, and on the second day the administrators, the industrialists and the enlightened citizens of Raipur, Bilaspur and Durg districts of M.P. were invited.

The objective of the seminar was to create an awareness about the computer and its uses among the people. The Computer being a versatile tool its relevant knowledge was felt to be a must for the different sections of people.

Prof. Navaneeth, Director, RSIC, dealt with the applications of the computers in educational institutions, in industries and in office management. Also he presented a brief history on the evolution of the computers with the help of slides. He warned that due to the Government policy on the high technology in Seventh Five Year Plan, there is going to be shortfall of trained manpower and it was high time to introduce different courses for training of software and hardware engineers and scientists.

Mr. S. Mohan of Hindustan Computers Ltd. discussed the configurations of the computer system. He explained the role of various devices constituting the system for its efficient functioning as a whole. He dealt with the system analysis covering the topics of the inventory control, data base management, payRoll and marksheet preparations.

Mr. Jeeven Prakash of Hindustan Computers Ltd. presented a brief history of HCL with the help of slides as well as a series of slide projections of the computerization of the shop-Account-System. A feedback session to interact directly with the members of the audience to clear their doubts was arranged on the last day.

On both the days a demonstration of the computer was made in the Department of Mathematics and Statistics. On the whole the large segment of different types of people have been introduced to the usefulness of the computer and its role in their respective activities and professions.

Poona Varsity seminar on microbial genetics and future challenges

A one-day seminar on Microbial Genetics was organized by the Department of Microbiology, University of Poona in collaboration with Association of Microbiologists of India on 25th March, 1985. The seminar was inaugurated by Prof. V.G. Bhide Vice-Chancellor of University of Poona. Prof. M.V. Panse, Head, Department of Microbiology welcomed the Chief Guest and participants and explained the present importance of the topic in connection with fast growing sciences of biotechnology and genetic engineering. He suggested that the growing need of high protein diet for increasing population can be met by food prepared by microorganisms. He also gave an account of research activities of the Department of Microbiology where he stated that microbial analysis of water and industrial waste can be made in the department along with other research activities.

Prof. Bhide in his inaugural speech emphasized the need for basic research in the field.

The keynote address was given by Prof. T. Ramkrishnan from Indian Institute of Science, Bangalore. He explained the importance of Microbial genetics particularly in industries, where the characters of microorganisms were changed due to mutation. This has helped increase production particularly of antibiotics, amino acids, enzymes etc. Development of important vaccines against various infection was also possible because of new techniques of genetic engineering.

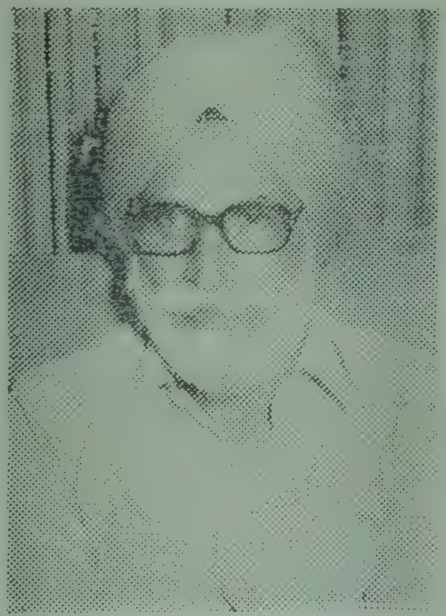
In the first scientific session Dr. Maitra from Tata Institute of Fundamental Research, Bombay, gave an account of recent advances in yeast genetics. He explained how organisms like yeast can be useful to produce industrially important solvents like alcohol using waste. This was followed by a lecture of Dr. S.K. Mahajan of Bhaba Atomic Research Centre Bombay, who gave a lucid and informative talk on gene mapping.

In the afternoon session Dr. B.N. Apte of Bombay told about new technique of protoplast fusion being used to develop industrially important strains useful to produce antibiotics. Dr. Hegde of Department of Biochmistry, Poona University gave a talk on various methods for mapping of genes responsible for production of maltose and permease.

This was followed by a lecture from Dr. Sudha Bhattacharya from Tata Research Centre, Poona. She emphasized the importance of genetic engineering for correct and quick diagnosis of important diseases like tuberculosis, typhoid etc.

New VC of GND University

Prof. S.S. Bal who took over as Vice-Chancellor of Guru Nanak Dev University, Amritsar recently was born on June 5, 1927. He obtained his Master's Degree from Delhi University in 1951 and Doctorate from School of Oriental and African Studies of London University in 1962. He did his specialization in Punjab History and Modern Indian History.



Prof. S.S. Bal

Prof. Bal was a Lecturer from 1952 to 1958 and from 1964 to 65; Reader in the Panjab University (1965-70); Professor in the Punjab Agricultural University (1970-76); and Professor in Punjabi University from 1976 till he assumed charge of his new assignment.

He was a member of the Academic Council and Senate of the Punjab Agricultural University and Punjabi University for a number of years. He was also Head of the Department of History of the Punjabi University.

Prof. Bal was appointed by the Punjab Government as Member of the Punjab Education Reforms Commission and Punjab Universities Text-Book Board in 1982. He was also appointed Member of the National Commission for Teachers by the Union Education Ministry in 1983. He is also a member of the Indian Council of Historical Research.

Prof. Bal has been appointed by UGC as National Lecturer to deliver lectures on Punjab History at Delhi University, Guru Nanak Dev University, North-Eastern Hill University and University of Jodhpur during February-August, 1985.

Prof. Bal has guided a number of PhDs and MPhils. He has written a number of books and has published over forty research papers. He has also contributed papers in the international seminars held at London and Berlin.

Engineering college to be set up at Jammu

It is reported that a decision has been taken by the State Government of Jammu and Kashmir to set up an engineering college at Jammu. Classes are expected to begin from September next.

Pending construction of a new building for the college, a decision was taken to locate the college in an existing space building of the Jammu Polytechnic.

The disciplines to be started in the college would be complimentary to those being taught at the Regional Engineering College, Srinagar.

PAU employees condemn violence

At a meeting of the Punjab Agricultural University consisting of its teaching and non-teaching employees held under the presidentship of the Vice-Chancellor, Dr. Sukhdev Singh on May 17, various speakers condemned the present prevalent violence and emphasisad that the forces, which were working behind these events should be condemned.

Dr. Sukhdev Singh, Vice-Chancellor cautioned the people to be aware of the forces which were trying to disrupt the developmental activities of the State.

The meeting adopted the following resolution :

"The Punjab Agricultural University, Ludhiana community consisting of teaching and non-teaching employees register their deep anguish on the recent spurt of violent events in this State as well as other parts of the country. The problems of the people can only be solved by a reasoned and peaceful approach and rational outlook. This community emphasises that all kinds of violence resulting in the suffering of innocent citizens should be stopped and the path of reason should be followed.

"The State needs to find a solution to the problems faced by the people.

"We call upon all democratic forces to come forward and work for the establishment of peace and communal harmony in the State and understand the game of the forces behind it which want ultimately to dismember the country through communal disharmony.

"We reiterate our resolve that this University will work for the economic development of the State and establishment of peace and promotion of a feeling of brotherhood among various communities living in the State."

University of Jammu celebrates 'Sankara Jayanti'

Under the auspices of the Sanskrit Parisat of the Post-Graduate Department of Sanskrit, University of Jammu, Sankara Jayanti was celebrated on 25th of April, 1985. On this occasion, inter-college recitation, competition of Sankara's stotras was held.

Again, on 27th of April 1985 on behalf of the Schools Sankara Jayanti was celebrated in the premises of Jagriti Niketan School, Jammu. A skit concerning Sankara's life and message was presented by the students of Jagriti Niketan on this occasion.

Organization of the J.C. Bose Botanical Society at GKV

A meeting of all students of botany department, teachers and researchers was held on May 10, 1985 under the chairmanship of Professor S.C. Tyagi, Principal, College of Science, and organized the J.C. Bose Botanical Society. The convener of the society, Dr. Purshotam Kaushik, declared that the society would be different from other conventional societies. The main objectives of the society would be to lead the action oriented programmes, to sort out the environmental problems and to solve them, and to pursue research of applied nature.

Association of Indian Universities

AIU House, 16 Kotla Marg, New Delhi-110002

Applications are invited by 4th June, 1985 on the prescribed forms available on payment of Rs. 2/- from the office of the Association of Indian Universities for the following posts:

1. **Cultural Officer** (Rs. 700-1300): Master's Degree from a recognised institution/university with a Bachelor's Degree in Fine Arts or its equivalent from a recognised university/organisation. Five years experience with a minimum of two years in organising cultural activities at University or equivalent level. Incumbent will be responsible for organising cultural programmes at Inter-University/National Levels. Deputation from University/Colleges/other organisations will be preferred. (Well qualified candidates may also be considered for the higher scale of Rs. 1100-1600).

2. **Assistants** (Three) : (Rs. 425-800) : Graduates with atleast five years experience in Govt./Semi-Govt. Organisations/Educational Institutions. Knowledge of typing will be preferable. In addition : For post (i) Candidates should be B.Com. (Hons.) with atleast second division or B.Com with first division. Knowledge of use of computers in accounts will be preferable. For post (ii) Experience in production, printing and proof reading. For post (iii) Flair in noting & drafting, familiarity with office procedures.

3. **Stenographer** (Rs. 425-800) : Graduate having speed of 120/60 w.p.m. in shorthand/typing with minimum three years experience as Junior Stenographer.

4. **Lower Division Clerk** : (Rs. 260-400) : Higher Secondary with typing speed of 40 w.p.m. Preference will be given to those having office experience and knowledge of shorthand.

Posts are temporary but likely to continue.

All posts carry AIU allowances generally at the Central Government rates. Preference will be given to SC/ST/Ex-servicemen.

News from Agril. Varsities

Workshop on soil and water engineering at PAU

Dr. Sukhdev Singh, Vice-Chancellor of the Punjab Agricultural University while presiding over a Workshop on Soil and Water Engineering held recently at Ludhiana said that despite dry weather in the State for the last nine months, the State had achieved a record production of wheat this year. This achievement could be possible because of the fact that 85 per cent of the agricultural area in Punjab was irrigated either by the canals or tubewells. Dr. Sukhdev Singh further said that since water was the most important input for crop production, it should be utilized through proper management which could vary from region to region. The Vice-Chancellor told that to tackle the various farm problems of the Kandi area, a research station had been established at Ballowal Saunkhri in Hoshiarpur district where intensive research on soil erosion, afforestation, and water harvesting technology was being conducted. Similarly, another research station at Bhatinda was being set up to conduct research on the breckish water, water logging and concentration of soil salts. The consolidation of land holdings in Punjab had greatly helped in reclaiming of soils in Punjab, he added.

Mr. Pritam Singh, Chief Soil Conservator of Punjab said that though Punjab occupied only 1.5 per cent of the geographical area, it produced about 25 per cent of wheat, 16 per cent of cotton and 6 percent of rice of India's total production. He further said that 84 per cent of the total area of Punjab was under cultivation which was perhaps the highest in the world.

Soil, which was a basic source of food, feed, fibre, fuel wood and timber was shrinking on account of continued loss of potential cultivable and agricultural land to non-agricultural use. To cope with the increasing demand for production, it was imperative to make a scientific use of soil and water. He said that on account of intensive cultivation, an action-oriented land use plan taking into consideration various problems and based on Soil Conservation Policy be worked out to help maintaining the tempo of production and minimise deterioration of soil and water resources.

Dr. Khem Singh Gill, Director of Research of PAU said that Punjab contributed 60 to 70 per cent of wheat and 40 to 50 per cent of rice to the National Pool. He further said that water was the most important input for raising crops. He said that in the hilly areas, particularly on account of indiscriminate felling of trees and absence of vegetation, erosion of soil was a great problem. For these areas, a suitable water harvesting technology was being developed by the PAU at its Kandi research station. Research was also going on there on growing galgal, amla and some fodder trees suitable to the climate of those areas. Small dams to irrigate the crops during dry weather had also been taken up. Research on controlling water logging, reclamation of kallar and use of breckish water for irrigation was also being conducted.

Dr. K.S. Nandpuri, Director of Extension Education said that drip irrigation had also proved useful in some areas if it was reasonably priced. Its economic part should be demonstrated, he added.

Basic agriculture course conducted at Sher-e-Kashmir University

The Extension Training Centre of the Sher-e-Kashmir University of Agricultural Sciences and Technology conducted a one-year basic agriculture course which was concluded recently. In this course sixty trainees from Leh, Ladakh, Kargil and Kashmir Valley were admitted and they studied subjects like Agriculture Botany and Crop Husbandry; Soil Science; Plant Protection and Agriculture; Vegetable, Floriculture and Mushroom; Farm Management, Agriculture Economics and Agriculture Extension and Co-operative Panchayat.

Dr. M.P. Gupta, Chief Training Organiser in his report revealed that the syllabus for this course seemed to be out-dated and needed revision to fulfil the requirement of trained men under TV programme and for horticultural development in the State.

Prof. Alludin Ahmed, Vice-Chancellor of the University in his address said that with the advent of Krishi Vigyan Kendra, the villagers in the vicinity of the Centre should be trained about the latest technology of agriculture and the fundamental aim of our university. He emphasised on the trainees, who completed their basic agriculture training at this centre, that they should disseminate their knowledge to the farmers.

The university has also started two years training programme for field-cum-laboratory assis-

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We Congratulate....

(1) Shri Rajiv Gandhi, Prime Minister of India, who has been unanimously elected Chancellor of Uchcha Shiksha Aur Sodh Sansthan, Postgraduate and Research Complex, Dakshina Bharat Hindi Prachar Sabha, Madras.

(2) Dr. S.M. Agrawal who has been appointed as Vice-Chancellor of the Ravishankar University, Raipur.

(3) Shri Bhaktadarshan who has been appointed as Vice-Chancellor of the Garhwal University.

(4) Prof. A.D. Pant who has been appointed as Vice-Chancellor of the Kumaon University.

tants at this Centre and more new training programmes for farmers, farm women and youths, field days and kisan melas are also planned in the near future.

Efforts are also being made to establish different units like Mushroom, Poultry, Bee Keeping, Fish rearing, Orchards, Saffron, Crop Museum, etc.

News from UGC

U.G.C. approves assistance for 359 projects

The University Grants Commission has approved 359 research projects, 295 minor and 64 major in Humanities and Social Sciences during the six month period from 16th June, 1984 to 31st January, 1985. These projects would involve a total financial assistance of Rs. 51.82 lakhs i.e. Rs. 20.98 lakhs for minor and Rs. 30.84 lakhs for minor projects.

Under the minor research projects scheme, the University Grants Commission provides financial assistance to individual university and college teachers, who do not have any other research scheme, to meet expenses connected with their individual projects upto the maximum of Rs. 10,000. However, for major research projects financial assistance is provided to University and College teachers for research or learned work in their respective fields of specialisation and for research on inter-disciplinary basis in areas which have remained relatively neglected but are of crucial importance to social and economic life of the country.

The subject-wise distribution of such approved projects is : **MINOR** : Commerce (80), Economics (68), Education (18), Political Science (31), Psychology (16), Sociology (14), Social Work (1), MIL (Hindi) (21), Law (15), History (27) & Classical languages (4). **MAJOR**: MIL (25), History (8), Pol. Science (8), Classical Languages (16), Economics (2) and Psychology, Education, English, Law and Philosophy one each.

UGC invites nominations for Hari Om Ashram Awards for outstanding scientists

The University Grants Commission has asked the universities and academic and research bodies to nominate outstanding scientists by June 15, 1985 for four awards; each of Rs. 10,000 out of endowment created with funds received from Hari Om Ashram Trust, Nadiad (Gujarat). The awards are named as (1) the Sir C.V. Raman Award for research in Physical Sciences, (2) the Homi J. Bhabha Award for research in Applied Sciences, (3) the Meghnad Saha Award for research in theoretical sciences and (4) the Jagdish Chander Bose Award for research in Life Sciences. These will be given to an individual or a team of scientists for outstanding scientific work, carried out in India, which has made important countribution to human knowledge in the areas covered by the scheme during the last five to seven years period.

INSAT 1-B Programme of UGC

Between 1st and 7th June, 1985, the following schedule of telecasts on higher education through INSAT-1B under the auspices of the University Grants Commission will be observed. The programme is of one hour duration every day from 12.45 p.m. to 1.45 p.m. (Repeated from 4 p.m. to 5 p.m.) and will be available on the TV network throughout the country. For the viewers in Delhi and surrounding areas, these programmes can be seen on the second channel.

1.6.85

"The Price of Progress"
"Help for Mother and Child"
"What does underdevelopment mean?"

2.6.85 (Sunday)

No Telecast

3.6.85

"Wind Energy"
"Visible and Beyond"
"Diffraction and Aberration"
"Lasers"

4.6.85

"Tuffy : The Sea Teacher"
"Mediterranean Oceanography"

5.6.85

"How to make simple scientific instrument"
"Mossbauer effect-1"
"Gasohol"
"In the Service of Mankind"

6.6.85

"With Nat and Trap"
"Blue Green Algae"
"Museum of Live Nature-1"

7.6.85

"No Short Cut to Success"
"Management and Development"
"Stone Cutters"

CALENDAR OF EVENTS

Proposed Dates of the Event	Title	Objective	Name of the Organising Department	Name of the Organising Secretary/Officer to be contacted
June 24-29, 1985	Executive Development Programme on Mining for Non-Mining Executives	—	Indian School of Mines, Dhanbad	Prof. M. Ramakrishna Deptt. of Continuing Education, ISM, Dhanbad
July 1-21, 1985	UGC sponsored short-term Institute on Polymer Science/Technology for teachers in Science and Engineering Colleges.	To impart training in theoretical and practical aspects of Polymer Science/Technology to teachers and research Scientists making use of the large facilities possessed by the Department.	Department of Polymer Science & Rubber Technology, University of Cochin, Cochin-22.	Dr. D. Joseph Francis Professor & Head Department of Polymer Science & Rubber Technology, University of Cochin, Cochin-22.
July 29-Aug 24, 1985	UGC Sponsored Summer Institute on "Computer Aided Numerical Analysis and Operations Research".	To familiarize the teachers on the programming languages and their applications; to encourage researchers to take-up real and sophisticated research problems which require Computational techniques.	Department of Mathematics & Statistics, University of Cochin, Cochin-22.	Dr. T. Thrivikraman Department of Mathematics & Statistics, University of Cochin, Cochin-22.
August-5 to Nov-29, 1985	Course on Remote Sensing and its applications to various-themes such as water resources, Mineral resources, Terrain evaluation and Land use Planning	To train middle level in-service engineers and scientists in the area of fundamentals of satellite remote sensing and its application	Centre of Studies in Resources Engineeing, I.I.T. Bombay.	Dr T.V. Pavate, Chief Project Engineer, Training Extension and Project Cell, I.I.T., Bombay.
September 9-12, 1985	UGC Sponsored All India Symposium on Recent Trends in Insect Endocrinology	—	Department of Zoology, Govt. College, Ajmer.	Shri J.N. Mathur, Director
November, 28-29 1985	**International Conference on New Technologies in Higher Education**	**To assess the possibilities of the now available new technologies in the background of the broad social and cultural context and the state and trends of Higher Education in India and other developing countries**	**Association of Indian Universities, IIT/Delhi, JNU, Jamia Millia and University of Delhi**	**Prof. Tapas Mazumdar (JNU), Prof. S. Shukla (Jamia Millia), Prof. L.R. Shah (JNU)**
December 12-14, 1985	Asia Pacific Symposium on Wind Engineering	Nature of wind and effect on structures and study of damage and its socio economic implications	Civil Engg. Department, University of Roorkee, Roorkee	Dr. S. K. Pathak, Organising Secretary
December 16-18, 1985	Indian Geotechnical Conference	To advance the state of knowledge about the geotechnical engineering and to give definite direction to the future research work	Earthquake Engg. Department, University of Roorkee, Roorkee	Dr. V. H. Joshi, Organising Secretary

Science & Technology Promotion Programmes of Department of Science & Technology

Introduction

A principal activity of the Department of Science and Technology (DST) is the coordination and promotion of S&T activities in several frontier and newly emerging areas of science and technology. This is done through several programmes/schemes implemented in a coordinised manner by the Science & Technology Promotion (STP) Division of DST. The salient features of the programme operated by STP Division are given below. Scientists and engineers are invited to make full use of the opportunities being provided under these programmes....

1. SERC & GRC Schemes for Research Support

The Science & Engineering Research Council (SERC) scheme and the General Research Scheme (GRS) of the department support time bound research projects usually of three years duration in areas which normally do not come under the direct purview of agencies like ICAR, ICMR, UGC, CSIR, etc., and Departments like Atomic Energy, Electronics, Environment, Ocean Development and Space. The objectives of the SERC and GRS schemes are....

(1) SERC: To support frontline research in emerging areas of science and engineering and in interdisciplinary fields. Research programme should be capable of making a significant impact on the scientific scene.

(2) GRS: To provide general research support to scientists on broad basis irrespective of institutions or areas of work so that they would not have to look for assistance from abroad, particularly under specific foreign currency programmes.

2. Thrust Area Programmes (TAPs)

The SERC scheme also encourages research in the identified Thrust Areas through a support mechanism which is more flexible and comprehensive than the one followed for individual research projects. New activities to be supported in Thrust Areas are:

(i) Coordinated research through Thrust Area Programme (TAP)
(ii) Setting up of Research Core Groups or Units
(iii) Training Programmes in identified areas of research, involving Young Seientists
(iv) Setting up of Support Facilities for research.

TAPs include major research programmes to be undertaken by Indian Scientists from different institutions in a coordinated manner, to enable the creating of a significant impact on the Scientific Scene.

**Note: Thrust Area Booklets in Life, Chemical, Physical & Engineering Sciences are separately available.

3. Intensification of Research in High Priority Areas (IRHPA)

This scheme is designed to provide a major conscious support to a few areas of research that have high priority from the viewpoint of advances in fundamental science or can be of great significance for national development. Intensive research in such areas of high priority is promoted by the following mechanism:

(a) Building up of a core group around highly competent Scientist.

(b) Supporting major national R&D programmes involving several institutions and agencies.

(c) By establishing specialised facilities critically required for carrying out research in high priority areas at the national level.

The mechanism of funding under IRHPA is closely related to SERC.

4. Promotion of Scientific Interest in Youth

To encourage involvement of young scientists (approximately 18-35 years age group) in the national S&T development process and to promote their interest in science, the following activities are supported under the Scheme:

(1) Small research and development projects and feasibility studies to promote scientific interest in youth.

(2) Organisation of seminars/symposia on subjects relevant to the promotion and encouragement of scientific interest in youth.

(3) Travel grants to young scientists for attending Training Courses, Summer/Winter Schools in India and abroad.

(4) Publications aimed at promoting scientific interest in youth.

5. Assistance to Professional Bodies and Science Academies

The DST has so far been providing limited support to the professional bodies in the field of Science & Technology and to Science Academies (hereafter called societies). A new scheme has been drawn up for specific provision of financial support to the societies in a manner which will enable these

to take on the extended responsibilities of creating a cohesive integrated scientific community through arranging regular meetings and conferences, publishing high quality journals, encouraging meaningful discussions, organising Science exhibitions etc. in a coordinated manner.

6. Support for Seminars & Symposia in Science & Technology

Financial support under the Scheme is provided organising Conferences and Seminars as well as for publishing their proceedings.

7. Partial Financial Support for Participation in International Conferences

Partial Financial Assistance towards travel is provided to Scientists for atttending international Conferences/Seminars/Workshops etc. The scientists should have an accepted paper for oral presentation in the Conference and/or an invitation to deliver a talk. The Indian National Science Academy (INSA) is already providing such support for Conferences sponsored by International Council of Scientific Unions (ICSU); the support from DST is therefore restricted to only non-ICSU conferences.

8. Futures Research

The objectives of the scheme are to promote research studies on quantitative modelling on various economic and commodity sectors, to examine existing ones and new policy instruments needed in future to foster economic growth through applications of S&T, and also to generate, through seminars and workshops, awareness to application of anticipatory techniques.

9. Scheme for Development of Scheduled Castes and Scheduled Tribes in Science & Technology Areas

This scheme is for the promotion of Technology for occupations engaging Scheduled Castes, Scheduled Tribes, landless labour and linked occupations. It focusses attention on an area of work requiring a special effort not available under the existing ongoing schemes. In particular, under this Scheme, it is proposed to support specific surveys to identify areas and the required technologies, formulate and implement projects to generate the same and promote programmes for field applications and proto-type development.

10. Science & Technology for Women

This Scheme has two major aspects....first relates to the role of Science and Technology in improving the life, working conditions and opportunities for gainful employment for women and the second to the contribution that women can make to the development of S&T and its application.

Under the scheme, it is proposed to formulate an All India Coordinated Project on Development of Technologies to benefit women in general (in reducing drudgery, increasing productivity in their areas of work, opening up of new vocations for them etc.).

11. State Councils on Science & Technology

This Scheme was initiated to catalyse the setting up of State Councils on Science & Technology. The main role of these Councils is to act as focal points in the States for Planning, Coordinating, promoting S&T activities within the State.

12. Regional Sophisticated Instrumentation Centres (RSICs)

The RSICs provide sophisticated instrument & equipment facilities to scientists from educational institutions, R&D Laboratories and industry on nominal charges. Scientists & Engineers are requested to make full use of these opportunities being provided under the DST programmes for S&T promotion.

Seven such centres have been established and are operational at:

(1) Indian Institute of Technology, Bombay
(2) Indian Institute of Technology, Madras
(3) Bose Institute, Calcutta
(4) Central Drug Research Institute, Lucknow
(5) Panjab University, Chandigarh
(6) North Eastern Hill University, Shillong
(7) Nagpur University, Nagpur

(Note : Detailed booklet is separately available)

For details and application forms please contact :

Adviser, Science & Technology Promotion Division
Department of Science & Technology
New Mehrauli Road
New Delhi-110 016
Telephone : **662260**
Telex : **031-2096 DST IN**
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One of the important functions of the Association of Indian Universities is to act as a clearing house of information on higher education in the country. Towards this end the AIU Library is engaged in collection building and developing instruments for the dissemination of research information. Over the years a valuable collection of books and documents on different aspects of higher education has been acquired.

The Library has also developed Bibliography of Doctoral Dissertations as an effective tool in the dissemination of research information. Retrospective bibliographies covering the period 1857-1970 and 1970-75 were the first to appear. Effective 1975, however, the bibliography is issued annually in two volumes. One volume deals with Natural and Applied Sciences while the other records doctoral degrees awarded in Social Sciences and the Humanities. In addition to the normal bibliographical details like the name of the Research Scholar, the title of the thesis, years of registration for and award of the degree, and the name of the University accepting the thesis for award of a doctoral degree, the bibliography also gives name and complete address of the supervising teacher and an availability note that seeks to inform whether a copy of the dissertation is available for consultation and use in the University Library/Department or Registrar's Office.

The columns 'Theses of the Month' and 'Research in Progress' are intended to cut out the time lag between the receipt of information and its inclusion in bibliography. Such Universities as are not sending us regular information in respect of Doctoral Theses accepted and research scholars enrolled are welcome to make use of these columns.

The Library is situated at 17-B, Indraprastha Marg, New Delhi-110002. It is open from 10 a.m. to 5 p.m. Monday through Saturday except Second Saturday.

RESEARCH IN PROGRESS

A list of Research Scholars Registered for Doctoral Degrees of Indian Universities

SOCIAL SCIENCES

Psychology

1. Singh, Kripa Shanker. *Depth of processing*. BHU, Varanasi. Prof. B.S. Gupta.

2. Singh, Udai Pratap. *Comprehension on test material:* BHU, Varanasi. Dr. C.B. Dwivedi.

3. Umesh. *Cognitive behaviour processing*. BHU, Varanasi. Dr. C.B. Dwivedi.

Sociology

1. Dube, Rajendra Prasad. *Jawaharlal Nehru : A sociological study in ideology and social change.* BHU, Varanasi. Prof. S.K. Srivastava.

Political Science

1. Dixit, Asha. *Dharmsuttotar kaleen prachin Bharatiya rajtantra*, BHU, Varanasi. Dr. H.N. Tripathi.

2. Dube, Sona. 1977*se* 1984 *tak ke Bharatiya Lok Sabha ka amm chunavon mein matdata ka vyavhar: Madhya Pradesh ke Sagar Jile ke vishesh sandarbh mein.* HS Gour, Sagar. Dr. R.C. Dube.

3. Gupta, Vibha. *Samaj kalyan ke kshetra mein janpad panchayaton kee bhumika: Sagar Janpad Panchayat ke vishesh sandarbh mein.* HS Gour, Sagar. Dr. G.P. Nama.

4. Kapoor, Suneera. *Concept of freedom in the writings of Sri Aurobindo and B.G. Tilak.* HPU, Shimla. Dr. Ranbir Sharma.

5. Lal, Ajay Livinston. *Impact of super power rivalry in the Indian Ocean on India's foreign policy.* HS Gour, Sagar. Dr. R.C. Dube.

6. Pandit Kulkarni, Vandana. *The erosion of federalism in Indian Constitution with special reference to centre state relations.* Shivaji U, Kolhapur. Dr. K.K. Kevalekar.

7. Singh, Neelam. *Bharatiya rashtriya andolan aur Dr. Bhim Rao Ambedkar.* BHU, Varanasi. Dr. H.N. Tripathi.

8. Srivastava, Maganlal. *Nagriya vikas mein nagarpalika nigam kee bhumika: Sagar Nagarpalika Nigam ke karyanvyayan.* 1981-85 *ke vishesh sandarbh mein.* HS Gour, Sagar. Dr. J.P. Nama.

Economics

1. Joshi, Ashok Shripad. *A study of the working of housing co-operatives with special reference to Kolhapur District.* Shivaji U, Kolhapur. Dr. (Smt.) S.B. Pandit.

2. Singh, Sanjay Kumar. *Rural development.* BHU, Varanasi. Dr. Rajendra Rai.

3. Singh, Sunil Kumar. *Grameen vikas mein Krishi Grameen Bank kee bhumika.* BHU, Varanasi. Dr. M.P. Singh.

4. Varma, Karunesh Kumar. *Investment policy in public sector undertaking.* BHU, Varanasi. Dr. S.C. Srivastava.

Education

1. Kulkar, Kishore R. *Construction and standardisation of unit tests in the subject of marathi for pupils of standard VIII.* Shivaji U, Kolhapur. Dr. R.B. Dewesthalae.

2. Sharma, Manju Lata. *A study of some of the variables influencing second language development of bilingual children.* BHU, Varanasi. Dr. T.S. Rao.

Commerce

1. Bhaumik, Samir. *An appraisal of financial performance of public sector companies in India since* 1971. BHU, Varanasi. Dr. K.N. Sharma.

2. Kazi Shariful Alam. *A comparative study on efficiency of tea marketing system in India and Bangladesh.* BHU, Varanasi. Dr. Aditya Mishra.

3. Regmi, Jaya Ram. *An appraisal of export promotion of selected products of Nepal.* BHU, Varanasi. Prof. R.A. Singh.

Management

1. Mitra, Dulal Chandra. *Project management in construction industries*. BHU, Varanasi. Prof. Mukund Lal.

2. Rai, Vinod Kumar. *Operational policies and practices of U.P.F.C.* BHU, Varanasi. Dr. Nageshwar Rao.

HUMANITIES

Philosophy

1. Impera, Romana. *The meaning of life and death in Juduism and in Christianity*. BHU, Varanasi. Prof. N.S.S. Raman.

2. Pandey, Anand Pratap. *Vihanan kee gyanmimansa ka samalochnatmak anusheelan*. HS Gour, Sagar. Dr. H.N. Mishra.

3. Porwal, Usha. *Shankar aur Arvind ka darshan: Ek tulnatmak adhyayan*. Devi Ahilya, Indore. Dr. R.N. Vyas.

4. Ram Narain. *Darshan jain-tark-shastra: Ek sameekshatmak anusheelan*. BHU, Varanasi. Dr. Kamalesh Kumar Jain and Dr. D.A. Gangadhar.

5. Singh, Shravan Kumar. *Yoga aur darshan mein antaranga sadhan*. BHU, Varanasi. Prof. L.V. Guru and Dr. B.N. Singh.

6. Tripathi, Surendra Kumar. *Tatvan Pallar Singh: Ek sameekshatmak anusheelan*. HS Gour, Sagar. Dr. H.N. Mishra.

Fine Arts

1. Bhowmik, Sushmita. *A critical study of the sangita parijatah with special reference to medieval musicologists of mela system*. Pb U, Chandigarh. Dr. R.K. Sharma.

2. Sharma, Nandita. *Vindhya chhetra kee lok chitrakala parampara*. BHU, Varanasi. Dr. R.N. Misra.

Language & Literature

1. Singh, Shambhu Nath. *Contrastive linguistics*. BHU, Varanasi. Prof. R.S. Sharma.

English

1. Agrawal, Rachna. *Edith Wharton: Conflict and character in her novels*. BHU, Varanasi. Prof. G.S. Thampi.

2. Beni Madho. *Nature of suffering in the novels of R.K. Narayan*. BHU, Varanasi. Dr. R.K. Shukla.

3. Gupta, Sangam Lal. *D.H. Lawrence : A study in the themes and techniques in his tales*. BHU, Varanasi. Prof. S.M. Pandey.

4. Mishra, Rajendra Kumar. *Ben Jonson's theory of comedy in relation to morality plays*. HS Gour, Sagar. Dr. R.S. Pathak.

5. Rai, Ajai Kumar. *Aristotle's theory of tragedy and the plays of Shakespeare*. BHU, Varanasi. Dr. R.N. Rai.

6. Srivastava, Neerja. *Sarojini Naidu: A study of her poetry*. BHU, Varanasi. Dr. R.K. Shukla.

Sanskrit

1. Chaube, Narayana. *Jyotish shastranusar Mahamantan Janamkundler dhyayanam*. BHU, Varanasi. Dr. Chandrama Pandey.

2. Mishra, Divendu Vijay. *Jyotish granthon mein vastu sambandhi alekhon ka vivechan*. BHU, Varanasi, Dr. R. Das Gupta and Prof. Ram Janam Mishra.

3. Mishra, Geeta Devi. *Upalabdha nirvachanon ka sameekshatmak adhyayan*. BHU, Varanasi. Dr. V.V. Dev and Dr. S.N. Mishra.

4. Mishra, Mrinalini. *Parashar Smriti mein ayurvedic sahitya ka adhyayan*. BHU, Varanasi. Dr. S.K. Dixit and Dr. R.P. Dwivedi.

5. Mishra, Rajendra Nath. *Parashar Smriti mein ayurvedic sahitya ka adhyayan*. BHU, Varanasi. Dr. Babban Tripathi and Dr. R.P. Dwivedi.

6. Ojha, Paras Nath. *Puranenusidhant jyotish tattvasameeksha*. BHU, Varanasi. Dr. Chandrama Pandey.

7. Pandey, Nagender Nath. *Shu Ma. madhyamdinsamhitayam Rudra Devta vimarsh*. BHU, Varanasi. Dr. Ranjan Sharma.

8. Pandey, Sarveshwar. *Vedesom devtaswarupam*. BHU, Varanasi. Dr. Kailash Chandra Dube.

9. Pandey, Shailja. *Parashar Smriti mein ayurvedic sahitya ka adhyayan*. BHU, Varanasi. Dr. L.P. Gupta and Dr. R.P. Dwivedi.

10. Sadhvi, Hempragya. *Jain darshanik graathon mein sidhant ka sameekshatmak adhyayan*. Devi Ahilya, Indore. Dr. H.R. Dholkia.

11. Sharma, Bineeta. *Parashar Smriti mein ayurvedic sahitya ka adhyayan*. BHU, Varanasi. Dr. R.P. Dwivedi and Dr. B. Bhattacharya.

12. Sharma, Devraj. *Jyotishe shabdanan mahatvam*. BHU, Varanasi. Dr. Chandra Bhanu Bhardwaj.

13. Singh, Rekha. *Parashar Smriti mein ayurvedic sahitya ka adhyayan*. BHU, Varanasi. Dr. R.P. Dwivedi.

14. Singh, Varunendra. *Parashar Smriti meini ayurvedic sahitya ka adhyayan*. BHU, Varanasi. Dr. N.A. Bharati and Dr. R.P. Dwivedi.

15. Subbaraidu, K.B. *Jeev braham bhedsatyatyatsatya vimarsh*. BHU, Varanasi. Prof. Sudhasu Shaker Shastri.

16. Tiwari, Avadhesh. *Grahlaghviya panchangepadhite sameeksharnam*. BHU, Varanasi. Dr. Chandrama Pandey.

17. Tiwari, Rameshwar. *Sanskritsya pramukheshu rupkeshu drishya suksha vastu vibhag*. BHU, Varanasi. Dr. Shiv Dutt Sharma.

18. Tiwari, Umeshwar. *Jyotish shastra kee itihasik prishtbhoomi*. BHU, Varanasi. Dr. Ramji Pandey.

19. Upadhyaya, Shridhar. *Chandragrahan vimarsha*. BHU, Varanasi. Dr. Chandrama Pandey.

Hindi

1. Gupta, Kalpana, *Parsi hindi rang manch ke sandarbh mein Radhe Shyam Kathavachak ke natakon ka anusheelan*. BHU, Varanasi. Dr. Narvadeshwar Rai.

2. Jain, Ashok Kumar. *Bundeli aur Bagheli ka sankarman kshetra: Ek sarvekshan purak adhyayan*. HS Gour, Sagar.

3. Rathour, Bhanumati. *Bhaktikaleen avadhi prabandh kavyon ka lok jeewan*. BHU, Varanasi. Dr. Mohan.

4. Shukla, Swadeep Lata. *Amritlal Nagar ke upanyason mein samaj darshan*. HS Gour, Sagar. Dr. Surendra Acharya.

5. Singh, Avadh Bihari. *Samakaleen hindi natakon kee rangdharmi prayogsheelata*. BHU, Varanasi. Dr. Vashistha Narayan Tripathi.

6. Singh, Devendra Prasad. *Rohtas Zile kee boli ka bhashavaigyanik adhyayan*. BHU, Varanasi. Dr. Mohan.

7. Srivastava, S. *Swatantrayottar Bharat ke samajik arthik parivartan ke pariprekshya mein satven athven dashak ke hindi upanyason ka samaj shastriya adhyayan*. BHU, Varanasi. Dr. R.C. Srivastava and Dr. Chauthi Rao Yadav.

8. Takbhate, Prakash V. *Athaven dashak ke hindi natakon mein pratibimbit samkaleen samsayon ka anusheelan*. Shivaji U, Kolhapur. Dr. S.G. Gokakakar.

9. Vishvakarma, Premnarayan. *Bundeli ke gatyarthak kriyapadon ka bhasha vaigyanik adhyayan*. HS Gour, Sagar. Dr. B.D. Mishra.

10. Yadav, Suresh Singh. *Hindi bhakti andolan aur Kabir*. BHU, Varanasi. Dr. Asha Pant.

Geography

1. Pandit, Pushpalata V. *A geographical study of tourism development in Mahabaleshwar: Pachagni Region*. Shivaji U, Kolhapur. Dr. R.N. Hardikar.

2. Ramchandra, Javalekar Shivaji. *Study of land units landuse and land capability in Bhogavati Basin, Maharashtra*. Shivaji U, Kolhapur. Dr. C.T. Pawar.

3. Solanki, Kusum. *Nimad ke maidan mein bhumi evam upyog: Krishi vikas ke star mein parivartnon ke kshetriya pratirup ka adhyayan*. Devi Ahilya, Indore. Dr. Y.G. Joshi.

History

1. Mariya Sugandhi, B. *A history of political movements in Travancore from* 1938-47. U Ker, Trivandrum. Dr. A.P. Ibrahim Kunju.

2. Srivastava, G.C. *Revenue administration in Ancient India*. BHU, Varanasi. Prof. Lallanji Gopal.

THESES OF THE MONTH

A list of Doctoral Theses Accepted by Indian Universities

SOCIAL SCIENCES

Psychology

1. Das, Mallika. *A psychophysiological study of human menstrual cycle.* U Calcutta.

Sociology

1. Amanulla, S. Mir. *Muslim social organization in Karnataka.* Bangalore U.

2. Joshi, K.G. *A sociological study of migrations and mobility in urban Karnataka : A case study of Raichur.* Gulbarga U.

3. Karanth, Gopal Krishna. *Change and continuity in agrarian relations: A case study of a Karnataka Village.* JNU, Delhi.

4. Naware, Shaila. *Socio cultural dimension of fertility behaviour.* SNDT, Bombay.

Social Work

1. Iqbal Ahmad Shariff. *Psycho social problems of young learners: Social work perspective.* Kar U, Dharwad.

Political Science

1. Gandotra, Babli. *Committee system in the two state legislatures, Jammu and Kashmir and the Panjab: A comparative study of their watch-dog committees.* U Jammu.

2. Jain, Lad Kumari. *Parliament and foreign policy: An illustrative case study during the Nehru era.* U Raj, Jaipur.

3. Mohapatra, Shyam Sunder. *Domestic politics and external relations of Bangladesh.* JMI, Jamianagar.

4. Sadashiv, Chougula Virupaxi. *The working of the Karnataka Public Service Commission since 1956: A functioanl assessment.* U Kar, Dharwad.

5. Verma, Vijay Lakshmi. *Nature and scope of judicial review in India.* JMI, Jamianagar.

Economics

1. Chaudhuri, Sudip. *Indigenous firms in relation to the transnational corporations in the drug industry in India.* JNU, Delhi.

2. Damle, Kunda Subhash. *Vidarbhateel adhunik laghu audyogcha arthik vikas* 1960 *to* 1980. Nagpur U.

3. Dasgupta, Asis Kumar. *Nassau Senior and the evolution of english classical political economy.* U Calcutta.

4. Gian Singh. *Levels of living of marginal farmers and agricultural labourers in rural Punjab.* Pbi U, Patiala.

5. Inderpal Singh. *Technological changes vis-avis income distribution: Inter and intra temporal and spatial analysis in the Rural Punjab.* PAU, Ludhiana.

6. Kulkarni, Jayant Balkrishan. *Evaluation of the Lead Bank Scheme in Nagpur District.* Nagpur U.

7. Mishra, Paras Ram. *Madhya Pradesh mein Western Coal Fields Limited Company ke niptare kee vyavastha evam audyogik sambandh: Chhindwara Jile ka vishesh adhyayan.* HS Gour, Sagar.

8. Sarma, Pulugurtha Perraju. *Poverty among agricultural labour households: A case study in Krishna District.* Andhra U, Waltair.

9. Waghmare, Vanshree Sevakram. *An evaluation of economic impact of transfer of technology programme on small farmers: A case study in Kaira District of Gujarat State.* SPU, Vallabh Vidyanagar.

Law

1. Makkar, S.S. *Judicial legislation by the Supreme Court on the crime of homocide.* U Raj, Jaipur.

2. Mehta, Y.S. *Experience with private companies under the Indian Companies Acts.* Saur U, Rajkot.

3. Mitra, Nripendralal. *Juvenile delinquency and correctional services in West Bengal: An appraisal of the existing system.* U Calcutta.

Public Administration

1. Srichandan, Gopal Krishna. *Tribal development and welfare legislation on Orissa from* 1950-1980: *A study in legislative and performance variations.* Berhampur U.

Education

1. Bhardwaj, Khazan Singh. *Humour in the Indian classroom: A study of classroom situations and materials.* JMI, Jamianagar.

2. Chaudhary, Kamlesh. *A factorial study of the teaching competencies of teachers teaching english at the secondary school level.* SNDT, Bombay.

3. Chhikara, Mahavir Singh. *An investigation into the relationship of reasoning abilities with achievement of concepts in life sciences.* JMI, Jamianagar.

4. Dholakia, Bhuwaneshwari Bhanuprasad. *A study of classroom climate and pupil growth construction of tools and survey.* MSU, Baroda.

5. Jain, Manju. *A study of piagetian logical thinking among certain groups of adolescent pupils using a group test.* U Raj, Jaipur.

6. Kokaty, Sharada. *Problems of the aged in the metropolitan city.* SNDT, Bombay.

7. Lalithakumari, K.A. *A study of class-room climate, teacher behaviour and pupils' psyche in innovative classrooms of some schools of Karnataka.* MSU, Baroda.

8. Mohammad Anowar-Ul-Aziz. *A study of science education programme in the secondary schools of Bangladesh.* MSU, Baroda.

9. Mudgal, B.S. *A comparative study of effect of conventional teachers training and skill based teachers training on teaching—pupils.* U Raj, Jaipur.

10. Parasnis, Hemlata. *To construct and standardize a test for measuring creativity in mathematics of X standard marathi medium students in Pune.* SNDT, Bombay.

11. Undurwade, Hiralal Gajanan. *A critical study of the educational development of backward classes in the Vidarbha Region of Maharsahtra.* Nagpur U.

12. Verma, Urmila. *Madhya Pradesh mein sharirik shiksha: Ek samalochnatmak adhyayan.* RDV, Jabalpur.

Commerce

1. Dave, Lalit Kumar. *Role of Life Insurance Corporation as financing agency* RDV, Jabalpur.

2. Kapoor, Satish K. *Performance of export houses in India.* Pb U, Chandigarh.

3. Rama Krishna Rao, M.V. *Economics of coconut cultivation, processing and marketing in Andhra Pradesh with special reference to selected villages in East Godavari District,* OU, Hyderabad.

4. Upagade, Vijaykumar Krishnarao. *Development of agroindustries in Nagpur District since* 1964. Nagpur U.

Home Science

1. Kanani, Shubhada Jaydev. *Intervention studies with antiparasitics, vitamin A and iron supplements on mid-day-meal programme beneficiaries.* MSU, Baroda.

2. Narasimha, H.V. *Studies on the cookability of pulses and factors affecting their cooking quality with special reference to tur, Cajanus cajan.* U Mysore.

3. Thomas, Anita Stanely. *Effect of organization of content on learning: A course in mass communication in home science by first year home science students.* MSU, Baroda.

Management

1. Kaptan, Sanjay Shankarrao. *A study of managerial movement in Vidarbha.* Nagpur U.

Department of Atomic Energy

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application of nuclear radiation and isotopes in agriculture, food & life sciences, medicine and industry.

Expansion programmes in the construction of nuclear power stations and heavy water plants are under way. A Centre for Advanced Technology coming up at Indore will be offering exciting and new challenges in the areas of fusion and accelerator programmes.

After successful completion of the orientation course, the candidates will be appointed as SCIENTIFIC OFFICERS in any of the units projects of the Department, such as

- **Bhabha Atomic Research Centre, Bombay/Laboratories at other places**
- **Reactor Research Centre, Kalpakkam**
- **Centre for Advanced Technology, Indore**
- **Power Projects: Bombay, Kalpakkam, Kota, Narora, Tarapur, Kakrapar**
- **Heavy Water Projects: Bombay, Baroda, Kota, Talcher, Tuticorin, Thal-Vaishet, Managuru**
- **Atomic Minerals Division: Hyderabad/Laboratories at other places**
- **Nuclear fuel Complex: Hyderabad.**

TRAINING COURSE

Training School courses comprise of both theory lectures and laboratory-cum-project work. Apart from the laboratories for Electronics, Nuclear Physics & Chemistry, additional laboratories for Microprocessors, Computer-aided Teaching, etc. have recently been established. The trainees will also have access to computing facilities in the campus.

STIPEND & SALARY

During Training: Rs. 1400/- per month + book allowances.

On successful completion of the training course advance increments in any one of the following scales will be given depending upon the performance:

Scientific Officer (SC): Rs. 700-40-900-EB-40-1100-50-1300 + Allowances.

Scientific Officer (C): Rs. 750-50-1000 + Allowances.

The total emoluments on initial appointment with advance increments will be around Rs. 2350/- per month in case of posting at Bombay.

Candidates will be under contractual obligation to serve the Department for a period of 3 years. During training, candidates will be provided hostel accommodation which is compulsory.

ELIGIBILITY

PHYSICS	M.Sc. degree in Physics/Applied Physics with marks not less than 60% and also should have minimum 60% marks at B.Sc.

	Mathematics upto B.Sc. at subsidiary/ancillary level is essential. Those with M.Sc. degree in Pure/Applied/General Mathematics need not apply.
CHEMISTRY	M.Sc. degree in Chemistry with marks not less than 60% and also should have minimum 60% marks at B.Sc. Mathematics upto XII Standard or equivalent and Physics upto B Sc. at subsidiary/ancillary level are essential. Those with M Sc. degree in Biochemistry need not apply.
ENGINEERING	Bachelor of Engineering (B.E./B.Tech./B.Sc. (Engg.) etc.) with not less than 65% marks in any of the branches viz. Mechanical/Electrical/Electronics/Instrumentation/Chemical/Metallurgy. Those with M.Sc. degree in Computer Science/Electronics/Instrumentation/Mineral Processing etc. need not apply if they do not possess B.E./B.Tech/B.Sc. (Engg.) etc. degree with marks not less than 65%

NOTE

Those who are having Ph.D. qualifications need not apply.

AGE

Less than 26 years as on 1st September 1985 Relaxable by one year for Engineering Master's degree holders and by 5 years for SC/ST candidates.

SELECTION

Selection will be on the basis of an interview at Bombay. Candidates called for interview will be given Second Class train fare.

Candidates who were interviewed and not selected earlier for the Training School course are not eligible to apply again, unless they acquire additional degree in the subject for which they wish to apply. Recognised additional qualifications are M.Phil./M.Tech./M.S./M.E.

For further details and application form, send a self addressed envelope (23 x 12 cm) with Rs. 1.30 stamps to Dy. Establishment Officer (R-IV), Bhabha Atomic Research Centre, Central Complex, Trombay, Bombay 400 085, CLEARLY INDICATING THE SUBJECTS FOR WHICH THE APPLICATION FORMS ARE REQUIRED. **Last date for receipt of completed application : 20th July 1985.**

davp 85/21

GURU GOBIND SINGH COLLEGE OF COMMERCE

(UNIVERSITY OF DELHI)

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Applications on plain paper stating the division and marks obtained in Higher Secondary, B.A., M.A., etc. for the Permanent posts of lecturers in Commerce (Four) : in Economics, English and Mathematics one each are invited by the undersigned so as to reach him on or before 20th June, 1985.

Pay Scale : Rs. 700-40-1100-50-1600.

ELIGIBILITY FOR LECTURERS

(a) A Doctorate's degree or research work of an equally high standard; and

(b) Good academic record with atleast second class (C in the seven point scale) Master's degree in a relevant subject from an Indian University or an equivalent degree from a foreign University.

Having regard to the need for developing inter-disciplinary programmes, the degrees in (a) and (b) above may be in relevant subjects :

Provided that if the Selection Committee if of the view that the research work of a candidate as evident either from his thesis or from his published work is very high standard, it may relax the requirement of "atleast second class" (C in the seven point scale) in Master's degree exam. in terms of level achieved at the said exam. as prescribed in (b) above.

Provided further that if a candidate possessing a Doctor's degree or equivalent research work is not available or is not considered suitable, a person possessing a good academic record, (weightage being given to M.Phil or equivalent degree or research work of quality) may be appointed on the condition that he will have to obtain a Doctor's/M.Phil degree or give evidence of research of high standard within eight years of his appointment, failing which he will not be able to earn future increments until he fulfils these requirements.

The posts carry allowances as per University rules in force from time to time. Persons already in employment must apply through proper channel.

The college reserves the right to change the nature and number of vacancies advertised.

Dr. S.S. Gulshan
PRINCIPAL

PANJAB UNIVERSITY

Advertisement No. 8/85

Applications are invited for the following posts so as to reach the Registrar, Panjab University, Chandigarh, alongwith postal orders of Rs. 10/- by **22-6-1985**. Fourteen days extra is permissible to persons who have to submit their applications from abroad :

1. **Professor** : (Rs. 1500-60-1800-100 2000-125/2-2500) : Mathematics-1.

2. **Readers** : (Rs. 1200-50-1300-60-1900) : Centre for Computer Science & Applications-1

Directorate of Correspondence Courses: Public Administration (leave vacancy) : 1

3. **Lecturers** : (Rs. 700-40-1100-50-1600) : Centre for Computer Science & Applications-2; Statistics (Leave vacancy) -1: Mathematics-1

V.V.B.I.S. & I. S., Hoshiarpur: Sanskrit (Teaching)-2; and Sanskrit (Research)-3 (temporary, but likely to be permanent-2: Leave Vacancy-1).

**P.U. Evening College : **Public Administration-1 : Mathematics-1.

Directorate of Correspondence Courses: Lecturer in Public Administration-1.

4. **Research Associates** : Centre for Advanced Study in Mathematics-2.

Category : A : Rs. 1400/-p.m. (fixed)
Category : B : Rs. 1600/-p.m. (fixed)
Category : C : Rs. 1800/-p.m. (fixed)
Category : D : Rs. 2000/-p.m. (fixed)

With facilities of annual increment of Rs. 100/- p.m. subject to the total emoluments including increments not exceeding Rs. 2,000/- per month+contingent grant of Rs. 5,000/- per year plus House Rent Allowance etc. The position is tenable initially for a period of three years extendable for another two years.

5. **Junior Research Fellows:** (Rs. 1000/- p.m. fixed). Centre for Advanced Study in Mathematics-4.

6. **Research Fellow** : (Rs. 950/-p.m. (fixed) Statistics-1: Mathematics-1.

7. **Research Scholars** : (Rs. 800/-p.m. (fixed) : Statistics-1 : Mathematics-2; Library Science-1; Sanskrit (VVBIS & IS, Hoshiarpur)-1.

Note

(i) The Vice-Chancellor could place before the Selection Committee names of suitable persons for its consideration alongwith the applications received in response to the advertisement.

(ii) It is not obligatory on the part of the University to call for interview every candidate who possesses the essential qualifications.

(iii) The number of vacancies may change.

10% of the Scholarships/Fellowships will be reserved for Scheduled Castes and Scheduled Tribes candidates provided they fulfil the minimum qualifications laid down for the award of such Scholarships/Fellowships. In case qualified candidates are not available the reserved Scholarships/Fellowships will be treated as unreserved. **The candidates whose results for the qualifying examinations are not declared by the closing date, may also apply. They shall intimate their results (if otherwise eligible) to the concerned Departments before the date fixed for selection.**

Candidates for the posts of Professor and Readers who do not possess a doctoral degree are required to submit 10 typed/cyclostyled copies of brief resume of their published work. 15% posts of Lecturers will be reserved for the members of the Scheduled Castes and 7½% for the members of the Scheduled Tribes, but these will be filled up by others if no suitable Scheduled Castes/Scheduled Tribes applicant is available.

Application forms alongwith, detailed qualifications can be obtained from the Cashier, Panjab University, Chandigarh, personally on payment of Rs. 2/- or by making a written request to the Deputy Registrar (Estt.) Panjab University, accompanied by self-addressed stamped envelope of 23 x 10 cms. and postal order of Rs. 2/- drawn in favour of the Registrar, Panjab University, Chandigarh.

For details see instructions for candidates enclosed with the application forms.

GULBARGA UNIVERSITY
GULBARGA

ADMINISTRATIVE OFFICE
"JNANA GANGA"
No. GUG/ADM/EST/(T)/85-86/543
Dated : 13-5-1985

Abstract Notification

Applications in the prescribed forms (in 8 sets) are invited from qualified candidates of Indian Citizen for the following posts in Gulbarga University. The applications together with necessary documents should reach the undersigned on or before **21-6-1985**.

Posts of Professor : Econoimcs-1 (SC), Microbiology-1 (ST).

Posts of Readers : Inorganic Chemistry-1 (SC), Mineral Processing-1(ST) Commerce-1 (GM), Economics-1 (BCM), Applied Electronics-1 (BSG), Marathi-1 (SC).

Posts of Lecturers : English-2 (SC & ST), Kannada-1 (GM), Mathematics-3 (BBM, BSG & SC), Analytical Chemistry-1 (GM), Bio-Chemistry-2 (BCT & GM), In-Organic Chemistry-1 (BCM), Physical Chemistry-1 (BSG), Political Science-2 (GM & SC), Applied Geo-Chemistry-1 (BSG), Chemical Engineering-1 (GM), Drilling-1 (BCM), Electrical Engineering-1 (BCT), Geology-3 (BT, GM & SC), Mechanical Engineering-1 (BCM), Metallurgy-1 (ST), Physics-1 (BSG) Commerce-4 (SC, BCM, GM & SC), Applied Electronics-1 (GM), Microbiology-2 (BCT & BCM), Library Science-1 (GM), History-2 (BSG & GM), Zoology-1 (SC).

Lecturers for College of Geology & Mineral Processing Nandihalli-Sandur English-1 (SC), Geology-1 (ST), Physics-1 (GM).

Pay Scales

1. Professors : Rs. 1500-60-1800-100-2000-125/2-2500.
2. Readers : Rs. 1200-50-1300-60-1900.
3. Lecturers : Rs. 700-40-1100-50-1600.
4. For Lecturers in College of Geology & Mineral Processing, Nandihalli-Sandur: 1050-50-1200-60-1500-75-1950.

Qualification

Professors : (a) Doctorate degree or research work of an equally high standard & (b) Ist or high 2nd class Master's degree in relevant subjects or an equivalent degree of Foreign university. An eminent scholar with published work of high quality actively engaged in research. Ten years experience of teaching or Research experience of guiding research at Doctoral level.

Readers : Qualifications prescribed for professor at (a) & (b) and about 5 years experience of teaching and/or research provided that atleast 3 of these years were as lecturers or in an equivalent position.

Lecturers: Qualification prescribed for Professor at (a) & (b). If a candidate possessing a Doctor's Degree or equivalent to research work is not available or is not considered suitable, a person possessing a consistently good academic record (weightage being given to M. Phil. or equivalent degree or research work of quality) may be appointed, provided, he has done research work for atleast two years or has practical experience in a Research Laboratory/Organisation on the condition that he will have to obtain a Doctor's Degree or give evidence of research of equivalent high standard within 8 years of his appointment; failing which he will not be able to earn future increments until he fulfils these requirements.

COLLEGE OF GEOLOGY & MINERAL PROCESSING NANDIHALLI-SANDUR

Lecturers : Ist or IInd Class Master's Degree in the relevant subject.

The prescribed application forms together with copy of detailed advertisement containing details of qualifications prescribed etc., can be had from the Registrar, Gulbarga University, Gulbarga on production of Bank

Challan in token of having paid Rs. 24/- towards application fee in the State Bank of Hyderabad, University Campus Branch. Outstation candidates desirous of obtaining application forms by Post should send D.D. of Rs. 24/- drawn in favour of Gulbarga University, Gulbarga, with a requisition and self-addressed cover measuring 28×12 cms. duly affixing potal stamp Rs. 2/-.

REGISTRAR

PANJAB UNIVERSITY
CHANDIGARH
(Advertisement No. 7/85)

Applications are invited for the following posts so as to reach the Registrar, Panjab University, Chandigarh, alongwith postal order of Rs. 10/- by 21-6-1985. Fourteen days extra time is permissible to the persons who have to submit their applications from abroad.

1. **Professors :** (Rs. 1500-60-1800-100-2000-125/2-2500)

Ancient Indian History, Culture & Archaeology-1; Economics-2; Gandhian Studies-1; Psychology-1; Lajpat Rai Professor of Political Science-1; Sociology-1.

2. **Readers:** (Rs. 1200-50-1300-60-1900)

Commerce & Business Management-1 (Temporary but likely to be permanent); Linguistics-1 (Department of English); English-1 (Temporary-Leave Vacancy) ; Economics-2; Law-2 (one permanent and one temporary but likely to be permanent; Labour Law-1; Public Administration-2; Psychology-1 Political Science-1; Philosophy-1; Panjabi-1; Sociology-1 (Temporary).

3. **Lecturers :** (Rs. 700-40-1100-50-1600)

Commerce & Business Management-1 (Temporary but likely to be permanent); English-2 (one permanent and one temporary but likely to be permanent); Economics-3; History of Art-1 (Department of Fine Arts); French-2; German-1 (Temporary-Leave Vacancy); Geography-2 ; Gandhian Studies-1; Hindi-1; History-3; Law-2; Psychology-1 (Temporary-Leave Vacancy); Political Science-2 (One permanent and one temporary but likely to be permanent); Philosophy-1; Physical Education-2 (one permanent and one temporary—Leave Vacancy); Sanskrit-2. (One permanent & one temporary but likely to be permanent).

4. **Research Assistant :** (Rs. 550-20-650-25-750)

Central Asian Studies-1 (Temporary—Leave Vacancy); Commerce & Business Management-1 (Temporary but likely to be permanent).

5. **Trained Instructor in Drama/Performing Arts-1** (Deptt. of Indian Theatre) : (Rs. 700-40-1100-50-1600)

6. **Instructor in Stage Carpentry, Model and Mask Making-1** (Rs. 500-20-700-25-900)

(Department of Indian Theatre).

7. **Movement Teacher-1** (Department of Indian Theatre) : Rs. 550-20-650-25-750)

8. **Instructor in Dance** (Deptt. of Music (Hobby Classes)-1: (Rs. 500-20-700-25-900)

9. **Research Fellows-2** @ Rs. 800/- p.m. (fixed) with an annual contingent grant of Rs. 3,000/-).

(Department of Guru Nanak Sikh Studies)

10. **Research Scholars :** (@ Rs. 800/- p.m. (fixed) with an annual contingent grant of Rs. 3,000/-).

Education-1; Law-1; Physical Education-1; Geography-1.

11. **Junior Research Fellow-1** (Deptt. of Gandhian Studies under the scheme of promotion of Gandhian Studies). (@ Rs. 800/-p.m. (fixed) to be raised to Rs. 950/-p.m. (fixed) after rigorous evaluation of the work of the scholar on completion of a period of two years with a contingent grant of Rs. 3,000/- p.a.).

Preferably below 30 years (40 years in case of Women candidates).

12. **Research Associate-1** (Department of Sociology)

Category A	: Rs. 1400/- p.m. (fixed)
Category B	: Rs. 1600/- p.m. (fixed)
Category C	: Rs. 1800/- p.m. (fixed)
Category D	: Rs. 2000/- p.m. (fixed)

Note

(i) The Vice-Chancellor could place before the Selection Committee names of suitable persons for its consideration along with the applications received in response to the advertisement.

(ii) It is not obligatory on the part of the University to call for interview every candidate who possesses the essential qualifications.

(iii) The number of vacancies may change.

10% of the Scholarships/Fellowships will be reserved for Scheduled Castes and Scheduled Tribes candidates provided they fulfil the minimum qualifications laid down for the award of such Scholarships/Fellowships. In case qualified candidates are not available the reserved Scholarships/Fellowships will be treated as unreserved. **The candidates whose results for the qualifying examinations are not declared by the closing date, may also apply. They shall intimate their results (if otherwise eligible) to the concerned Department before the date fixed for selection.**

Candidates for the posts of Professors and Readers who do not possess a doctoral degree are required to submit 10 typed/cyclostyled copies of brief resume of their published work. 15% posts of Lecturers will be reserved for the members of the Scheduled Castes and 7½% for the members of the Scheduled Tribes, but these will be filled up by others if no suitable Scheduled Castes/Scheduled Tribes applicant is available.

Persons already in service should route their applications through proper channel. **Incomplete forms and those received after the due date are liable to be rejected unless the Vice-Chancellor condones the delay or discrepancy by a special order.** Attested copies of Certificates in support of qualifications for Matriculation/School leaving, graduation, post-graduate examinations as also for Doctorate Degree be attached to the application. Serving employees may, however, send their applications on the prescribed proforma direct to the University. They may route another copy through their Departments. They will be allowed to present themselves for interview only on the production of a 'No Objection Certificate' from their employers. Canvassing in any form will disqualify the candidate.

Application forms along with detailed qualifications can be obtained from the Cashier, Panjab University, Chandigarh personally on payment of Rs. 2/- or by making a written request to the Deputy Registrar (Estt.) Panjab University, accompanied by self-addressed stamped envelope of 23x10cms and postal order of Rs. 2/- drawn in favour of the Registrar, Panjab University, Chandigarh.

For details see instructions for candidates enclosed with the Application Form.

HIMACHAL PRADESH UNIVERSITY
'RECRUITMENT BRANCH'
Advertisement No. 2/85

Applications are invited (on prescribed form) for the following posts so as to reach the **Section Officer, Recruitment Branch, H.P. University, Shimla-171005,** alongwith a crossed Indian Postal Order of Rs. 10/- (Rs. 5/- for S.C./S.T.) payable to the Finance Officer, H.P. University, Shimla by **the 12th June, 1985.**

I. **Professor :** (Pay Scale : Rs. 1500-2500) in the following subject of the P.G. Centre:

Physics-1 (Spl. in one of the following areas: Nuclear Physics, Solid State Physics, Electronics, Particle Physics)'

II. **Readers** (Pay Scale : Rs. 1200-1900) in the following subjects of the P.G. Centre:

Physics-1 (Plan Post) (Spl. in any branch of Experimental Physics like X-rays, Crystallography, Spectroscopy or experimental Solid, State Physics), **Chemistry-1** (Spl. in Organic/Inorganic/Analytical/Physical Chemistry. Experience in experimental and theoretical spectroscopy will be preferred), **Statistics-1** (Plan Post), **Economics-1, Sanskrit-1.**

III. **Lecturers** (Pay Scale : Rs. 700-1600) in the following subjects of P.G. Centre:

Physics-1 (Spl. in one of the following areas: Nuclear Physics, Electronics, Solid State Physics), **Statistics-1, Chemistry-3** (One each in Physical, Organic, Inorganic/Analytical.

IV. **Principal :** (For H.P. University Evening College, Shimla) (Pay Scale: Rs. 1200-1900).

V. **Controller of Examinations :** Pay Scale : Rs. 1500-2500).

Essential Qualifications

I. **For Professor :** An eminent scholar with published work of high quality actively engaged in research. Ten years experience of teaching and/or research.

Experience of guiding research at Doctoral level.

OR

An outstanding scholar with established reputation who has made significant contribution to knowledge.

II. **For Reader** : Good academic record with a Doctoral degree or equivalent published work. Evidence of being actively engaged in x (i) research or (ii) innovation in teaching methods or (iii) production of teaching materials.

About five years experience of teaching and/or research provided that at least three of these years were as Lecturer or in an equivalent position.

This condition may be relaxed in the case of candidates with outstanding research work.

III. **For Lecturer:** (a) A Doctorate's degree or research work of an equally high standard; and

(b) Good academic record with at least second class (C in the seven point scale) Master's degree in the relevant subject from an Indian University or an equivalent degree from a foreign University.

Having regard to the need for developing interdisciplinary programmes, the degrees in (a) and (b) above may be in relevant subjects.

Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work of is very high standard it may relax any of qualifications precribed in (b) above.

Provided further that if a candidate possessing a Doctorate's degree or equivalent research work is not available or is not considered suitable, a person possessing a good academic record (weightable being given to M.Phil or equivalent degree or research work of quality) may be appointed provided he has done research work for atleast two years or has practical experience in a research laboratory/organisation on the condition that he will have to obtain a Doctor's degree or give evidence of research of high standard within eight years of his appointment, failing which he will not be able to earn future increments until he fulfils these requirements.

Explanation : For determining 'Good academic record' the following criteria may be adopted for Lecturers.

(i) A candidate holding a Ph.D. degree should possess atleast a second class Master's degree; or

(ii) A candidate without a Ph.D. degree should possess a high second class Master's degree and second class in the Bachelor's degree; or

(iii) A candidate not possessing Ph.D. degree but possessing second class Master's degree should have obtained first class in the Bachelor's degree.

High second class may be determined as the mid point of the starting of the second class and starting of the first class of the University from where he has obtained the degree.

IV. **For Principal** : (i) Same as for a lecturer; and

(ii) Atleast ten years experience of teaching degree classes in an affiliated or a University College.

V. **For Controller of Examinations**

Master's degree in any faculty with five years' experience as a Principal in a College affiliated to or maintained by the University.

OR

Teaching Experience as a Reader in a University with five years administrative experience.

OR

Master's degree in any faculty, with five years' experience as a Deputy Registrar or in an equivalent post in a University or Board of School Education.

OR

Master's degree in any Faculty with five years' administrative experience in the Central or State Government administrative Service (on deputation if necessary).

OR

Master's degree of a recognised University or its equivalent qualification with at least 10 years administrative experience in a University or an educational institution.

Candidates already in service should send their applications through proper channel. An advance copy, however, may be sent direct.

Candidates called for interview will have to come to the place of the interview at their own expenses and bring with them their original research papers, degrees and certificates etc. for verification.

The University reserves the right to negotiate with suitable person or persons, if necessary, who may not have applied formally.

The University also reserves the right to fill up or not to fill up the posts or to call only selected candidates for interview. The number of posts likely to be filled may vary.

Application form can be obtained from the **Section Officer Recruitment Branch, H.P. University, Shimla-171005,** personally on payment of Rs. 2/- or by making a written request to him accompanied by self-addressed envelope of 23x10 cms. with postage stamps affixed worth 80 Paise, and a postal order of Rs. 2/- drawn in favour of the Finance Officer, H.P. University, Shimla-5.

Note

(i) Applications received on plain paper, applications not in conformity with the requirements as specified in the application form and applications received after the due date will not be entertained, and no correspondence will be entertained in this regard.

(ii) A person applying for more than one post should send a separate application for each post.

A.R. Chauhan
REGISTRAR

INDIAN INSTITUTE OF TECHNOLOGY DELHI

HAUZ KHAS : NEW DELHI-16

Advertisement No. 8/85 (E.I)

Announcement for Position of Professor in the Centre for Industrial Tribology Machine Dynamics and Maintenance Engineering (ITMMEC)

(a) **Post** : Professor

(b) **Pay Scale** : Rs. 1500-60-1800-100-2000-125/2-2500 (plus allowances as applicable in the Government of India).

(C) **Minimum Qualifications/Experience Prescribed for Appointment**

An eminent scholar with published work of high quality engaged in research. Ten years experience of teaching and/or research. Experience of guiding research at doctoral level.

OR

An out standing Engineer/Technologist with established reputation who has made significant contribution to knowledge.

Applicants can be considered for appointment also to the post of Chief Design Engineer in the pay scale of Rs. 1500-60-1800-100-2000-125/2-2500.

The Centre of Industrial Tribology Machine Dynamics and Maintenance Engineering (ITMMEC) is the first national Centre in the country, which was established in 1978 under Indo-Norwegian Technical Collaboration. The main objective of the Centre is to undertake and promote industrial oriented programmes in the fields of (1) Friction and Wear, (2) Equipment Performance, Diagnostics and Dynamics, (3) Condition Monitoring and Maintenance Engineering and (4) Lubrication and Lubricants. Centre has excellent facilities for Industrial oriented research, basic research and development work, and is providing extensive field services and consultancy to industries. The facilities include NOT facilities, TV Holography, Vibration Measurement and Analysis facilities, Thermography and several tribotesters, Ferrography, IR and GCMS Systems for tribological research. Additional facilities like Scanning Electron Microscope, Corrosion Monitoring Equipment and Real Time Analysers are being actively pursued. Thus the Centre offers excellent opportunities and environment for the pursuit of industrial research and development work. IIT Delhi is keen to recruit personnel at the senior level at this Centre.

Prescribed application forms may be obtained from the Deputy Registrar (Estt-(I), Indian Institute of Technology, Hauz Khas, New Delhi-110016 either in person or sending by post a self addressed stamped envelope (size 10×23cms) bearing postage stamps of 95 paise latest by **23-6-1985.** Last date for submission to application forms alongwith crossed Indian Postal Order worth Rs. 7.50 (Rs. 1.87 for SC/ST candidates) is **1-7-1985** in India and **8-7-1985** for candidates abroad.

INDIAN INSTITUTE OF TECHNOLOGY DELHI

HAUZ KHAS: NEW DELHI-16

ADVERTISEMENT NO. 9/85(E.I.

ANNOUNCEMENT FOR STAFF POSITIONS

Position	Pay Scale
(A) ASSISTANT PROFESSOR	Rs. 1200-50-1300-60-1900.
LECTURER	Rs. 700-40-1100-50-1600.
SENIOR SCIENTIFIC OFFICER GRADE I	Rs. 1100-50-1600.
SENIOR SCIENTIFIC OFFICER GRADE II	Rs. 700-40-900-EB-40-1100-50-1300.

(B) DEPARTMENT/CENTRE/PROGRAMME WHERE POSITIONS WILL BE FILLED

Department/Centre/Programme	Position	Specialisation
Department of Computer Science & Engineering.	Assistant Professor, Lecturer, SSO Gde. II	Microprocessor, Fault Tolerant Computing, Design Automation, VLSI Systems, Pattern Recognition, Artificial intelligence, Computer Graphics, Programming Languages & Compilers Operating Systems, Data Basis, Computer Networks, Distributed Processing, Design and analysis of algorithm and Theoretical Computer Science.
Centre for Material Science & Technology	Assistant Professor SSO I Lecturer SSO II	Polymer Science & Materials, Building Materials, Solid State Electronics Materials.
Centre for Systems & Management Studies	SSO II	Human resources/management/organisational behaviour.
Troposcatter Programme (Deptt. of Electrical Engineering)	SSO II	Microwave, Communications, Electromagnetic Wave Propagation, Electronics Circuits.
Scanning Electron Microscopy Laboratory	SSO I	Scanning Microscopy

(C) Minimum Qualifications/Experience needed for Appointment

(a) Assistant Professor

(i) **For posts in the Department of Computer Science & Engineering :**Good academic record with a Doctorate Degree in relevant field. About 5 years experience of teaching and/or research and development.

Provided further that candidates not possessing Ph.D. may be considered if they have to their credit equivalent research published work of design/development work of a higher order either in an Institution or an industry.

OR

In the case of persons to be recruited from Industry or professional fields, candidates should possess good academic record with recognised professional work of about 7 years which should include innovation and/or research and development.

(ii) **For posts in Centre for Material Science & Technology :**

As for a (i) above.

OR

Good Master's degree in appropriate field with minimum 5 years experience in teaching/research in Institution of University standard, specialised knowledge in one or more specified fields/subject with outstanding teaching/research experience and doctorate degree or published work of equal standard would be preferred.

(b) Lecturer

(i) **For posts in Department of Computer Science & Engineering :** Master's degree in appropriate field in engineering/technology; Consistently good academic record with a bachelor's degree in Engineering/Technology. First class at Bachelor's degree and/or Master's degree level; One year's relevant professional experience outside academic/research Institutions.

Provided further that if a candidate does not possess professional experience or a person possessing such experience is not found suitable, the persons appointed will be required to obtain desired professional experience within a period of five years of his appointment failing which he will not be able to earn future increment until he fulfils this requirement.

(ii) **For Post in Centre for Material Science & Technology :**

As for b(i) above.

OR

Good Master's degree in appropriate field with 2 years' research/industrial research experience in any Institution of University standard/Establishment of repute. Doctorate degree or published work of equal standard preferred.

(c) Senior Scientific Officer Grade I

For post in the Centre for Material Science & Technology : Good Bachelor's degree in an appropriate field of Engineering or Master's degree in appropriate field of Science with 5 years experience in Research and Development.

For post in the SEM Laboratory : Degree in Electrical/Electronics/Instrumentation Engineering or Master's degree in Physics with specialisation in Electronics/Instrumentation with minimum of 5 years experience in running/maintaining scanning and/or transmission electron microscope facility. Ability to handle different types of samples and to coordinate work in inter-disciplinary projects/areas.

Persons with lesser experience, (minimum 2 years) but of considerable promise may be considered for appointment as Senior Scientific Officer Grade II in the lower pay scale of Rs. 700-40-900-EB-40-1100-50-1300.

(d) Senior Scientific Officer Grade II

Good Bachelor's degree in an appropriate field of Engineering or a Master's degree in an appropriate field of Science/Arts with some experience in research and development.

Prescribed application forms may be obtained from the Dy. Registrar (E-I), Indian Institute of Technology, Hauz Khas, New Delhi-110016 either in person or sending by post a self addressed stamped envelope (size 10×23cms) bearing postage stamps of 95 paise latest by **23-6-1985** . Last date for submission of application forms alongwith crossed Indian postal order worth Rs. 7.50 (Rs. 1.87 for SC/ST candidates) is **1-7-1985** in India and **8-7-1985** for candidates abroad.

UNIVERSITY NEWS, JUNE 1, 1985 Regd. No. R. N. 7180/63 Post Regd. D(C) 1086

PANJAB UNIVERSITY
CHANDIGARH

Advertisement No. 6/85

Applications are invited for the following posts so as to reach the Registrar, Panjab University, Chandigarh, alongwith postal order of Rs. 10/- by **June 20, 1985**. Fourteen days extra time is permissible to the persons who have to submit their applications from abroad.

1. **Professor** : (Rs. 1500-60-1800-100-2000-125/2-2500)
   Anthropology-1 (Physical Anthropology) (temporary leave vacancy)
   Chemical Engineering & Technology-2 (Chem. Engg)
   Chemistry-1 (Chemical Education) (Under COSIP-ULP)
   Pharmaceutical Sciences-1 (Pharmacology)
   Physics-2
   Zoology-1 (Cell Biology/Entomology)
2. **Readers** : (Rs. 1200-50-1300-60-1900)
   Anthropology-1 (Social Anthropology)
   Microbiology-2
   Chemistry-2 (Physical Organic Chemistry-1) (Physical Inorganic Chemistry-1)
   Pharmaceutical Sciences-1 (Pharmacognosy)
   Physics-1 (Nuclear Spectroscopy)
   Zoology-4 (Protozoology-1, Fish Biology-1, Cell Biology-1, and Parasitology/Fish and Fisheries-1)
3. **Lecturers** : (Rs. 700-40-1100-50-1600)
   Anthropology-1 (Palaeoanthropology/Palaeontology)
   Biochemistry-2
   Biophysics-3 (Medical Physics/Medical Instrumentation-1, Molecular Biophysics (Molecular spectroscopy/X-ray crystallography-1 and Membrane Biophysics-1)
   Microbiology-2 (Virology-1)
   Chemical Engineering & Technology-1 (Mechanical Engineering)
   Chemistry-1 (Physical Chemistry)
4. **Teaching Assistant** : (Rs. 550-20-650-25-750)
   Biophysics-1
   Biochemistry-1
5. **Research Assistant** : (Rs. 550-20-650-25-750)
   Microbiology-1
6. **Research Associate**
   Physics-1 (Bubble Chamber Programme) @ Rs. 1400/1600/1800 p.m. (fixed)
7. **Research Associates**
   Physics-3 (Theoretical Nuclear)
   Physics-1 @ Rs. 1600/-p.m. (fixed) Theoretical Solid State Physics-1 @ Rs. 1600/- p.m. (fixed)
   Experimental Solid State Physics-1 @ Rs. 1400/- p.m. (fixed)

With facilities of annual increment of Rs. 100/- p.m. subject to the total emoluments including increments not exceeding Rs. 2,000/- per month+contingent grant of Rs. 5,000/- per year plus House Rent Allowance etc. The positions are tenable initially for a period of three years extendable for another two years.

8. **Research Associates** : (Between Rs. 900/- and Rs. 1,500/- per month) fixed depending upon the qualifications and experience)
   Zoology-4 (One each in (1) Aquatic Biology (Limnology/Ichthyology), (2) Cell Biology (Cytogenetics/Cytophysiology) (3) Entomology, (4) Parasitology)
9. **Research Fellows** @ Rs. 950/- p.m. (fixed)
   Zoology-3
10. **Junior Research Fellows** @ Rs. 1,000/-p.m. (fixed)
    Zoology-4 (One each in (1) Aquatic Biology (Limnology/Ichthyology), (2) Cell Biology (Cytogenetics/Cytophysiology) (3) Entomology, (4) Parasitology
11. **Research Scholars** @ Rs. 800/- p.m. (fixed)
    Microbiology-2
    Geology-1
    Biophysics-3
12. **Research Scholar-cum-Demonstrators** @ Rs. 800/-p.m. (fixed)
    Biochemistry-1
    Physics-2
    Chemistry-1 (Organic Chemistry)

Note

(i) The Vice-Chancellor could place before the Selection Committee names of suitable persons for its consideration alongwith the applications received in response to the advertisement.

(ii) It is not obligatory on the part of the University to call for interview every candidate who possesses the essential qualification.

(iii) The number of vacancies may change.

10% of the Scholarships/Fellowships will be reserved for Scheduled Castes and Scheduled Tribes candidates provided they fulfil the minimum qualifications laid down for the award of such Scholarships/Fellowships. In case qualified candidates are not available the reserved Scholarships/Fellowships will be treated as unreserved. **The candidates whose results for the qualifying examinations are not declared by the closing date, may also apply. They shall intimate their results (if otherwise eligible) to the concerned Departments before the date fixed for selection.**

Candidates for the posts of Professors and Readers who do not possess a doctoral degree are required to submit 10 typed/cyclostyled copies of brief resume of their published work. 15% posts of Lecturers will be reserved for the members of the Scheduled Castes and 7½% for the members of the Scheduled Tribes, but these will be filled up by others if no suitable Scheduled Castes/Scheduled Tribes applicant is available.

Application forms alongwith detailed qualifications and instructions etc., can be obtained from the Cashier, Panjab University, Chandigarh, personally on payment of Rs. 2/- or by making a written request to the Deputy Registrar (Estt), Panjab University, accompanied by self addressed stamped envelope of 23x10 cms and a postal oder of Rs. 2/- drawn in favour of the Registrar, Panjab University, Chandigarh.

FOR DETAILS SEE INSTRUCTIONS FOR CANDIDATES ENCLOSED WITH THE APPLICATION FORM.

Note

1. The candidates who have applied for the posts of Professor and Readers in Zoology in response to Advt. Nos. 2/84 and 4/84 need not apply on the application form. They may, however, inform the Registrar on a plain paper if they want their candidature to be considered.
2. For the award of Junior Research Fellowships in Zoology the applicant should have qualified in the National level test conducted by the University Grants Commission provided he possesses the requisite qualifications.

UTKAL UNIVERSITY
VANI VIHAR
BHUBANESWAR-751004

Advt. No. Estt. I/926-C/A-9169/85

Dated : 14-5-85

Applications in Seven Copies are invited in the prescribed form along with attested copies of certificates and Marklists of all examinations passed for one post of Reserve Bank Professor of Institutional Finance in the P.G. Department of Analytical and Applied Economics of the University on or before **10-6-85** on following conditions.

1. The University reserves the right to reject any or all applications without assigning any reason thereto.
2. No deputation allowance will be paid to the person holding lien in Govt. Leave Salary and pension contribution may be paid only for two years.
3. A panel of selected candidates will be maintained to be valid for one year from the date of selection.
4. No T.A./D.A. will be paid to attend the interview and join the first appointment.
5. No applications will be entertained after the last date.

Desirable

Preference will be given to one who has specialization in Institutional Finance, Published some research work of higher standard in the field and experience in guiding research work on the subject Institutional Finance.

Prescribed application forms can be had from the Information counter, Utkal University on payment of Rs. 7.60 including local sales tax (Rupees Seven and paise sixty) only or by post on receipt of a Crossed Indian Postal Order for Rs. 10/- (Rupees ten only) payable to the Finance Officer, Utkal University, Vani Vihar, Bhubaneswar 751004.

REGISTRAR

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University News

JUNE 8, 1985

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Mysore

Shri R. Venkataraman, Vice-President of India, delivering the convocation address at the Gandhigram Rural Institute (Deemed University). Dr. M. Aram, Vice-Chancellor of the University is seated second from left.

CLASSIFIED ADVERTISEMENTS

THE UNIVERSITY OF BURDWAN

RAJBATI : BURDWAN
WEST BENGAL

Advertisement No. 13/84-85
Dated: 24 May, 1985

Applications are invited to fill up the following posts:

I. For **Computer Centre**

1. **System Manager (Head of the Computer Centre) :** Post one in the scale of pay of Rs. 1500-60-1800-100-2000/- plus other allowances as per rules of the University.

Essential Qualifications : M.E./M. Tech. with specialisation in Computer Science having 6 years of experience in the Computer Field OR B.E./B.Tech/ M.Sc. (Physics/Mathematics/Statistics/ Chemistry) with 8 years of experience in the field of Computer Science.

Desirable

(i) Doctorate Degree in Computer Science or Allied Field.

(ii) Advanced knowledge in one or more of the following:

Compiler, OS, Numerical Analysis, Operations Research, System Analysis & Design.

(iii) Experience in Administration.

N.B.

In case a Professor of a University possessing necessary qualifications and experience in Computer Science & Technology is appointed to the post, such a person will continue to carry his usual scale of pay as Professor.

2. **System Engineer:** Post one in the scale of pay of Rs. 1100-50-1600/- plus other allowances as per rules of the University.

Essential Qualifications: M.E./M. Tech. in Computer Science with two years of experience OR B.E./B.Tech M.Sc. (Physics/Mathematics/Statistics/ Chemistry) with three years of experience in Computer Science.

Desirable

Experience in software maintenance.

3. **Programmer :** Post two in the scale of pay of Rs. 700-40-1100-50-1300/- plus other allowances as per rules of the University.

Essential Qualifications : M.E./M. Tech in Computer Science OR B.E./ B.Tech/M.Sc. (Physics/Mathematics/ Statistics/Chemistry/) with two years of experience in programming in Scientific/business language.

4. **Computer Operator (Jr.) :** Post three in the scale of pay of Rs. 450-25-625-30-805-35-910-45-1000/- plus other allowances as per rules of the University.

Qualifications

B.Sc. in Physical Science with three years of experience in Computer Operation.

5. **Data Entry/Key Punch Operator:** Post two in the scale of pay of Rs. 350-10-410-15-500-20-700/- plus other allowances as per rules of the University.

Qualifications

Higher Secondary with experience in data entry machine.

6. **L.D.C. (Jr. Asstt.-cum-Typist):** Post one in the scale of pay of Rs. 400-15-430-20-530-25-655-30-865-35-900/- plus other allowances as per rules of the University.

Qualifications

Higher Secondary in First Division OR S.F./Madhyamik in Second Division with Second Division at H.S. (10+2) stage. OR S.F./Madhyamik/ H.S. in Second Division and a Degree in addition with a typing speed of 40 words per minute.

7. **U.D.C. (Sr. Asstt.) :** Post one in the scale of pay of Rs. 500-25-550-30-700-35-770-40-1110-45-1100/ plus other allowances as per rules of the University.

Qualifications

S.F./Madhyamik/H.S. in Second Division and a Degree in addition with experience in accounts and Store-keeping in a Computer installation.

8. **Job Receptionist :** Post one in the scale of pay of Rs. 500-25-550-30-700-35-770-40-1010-45-1100/- plus other allowances as per rules of the University.

Qualifications

S.F./Madhyamik/H.S. in Second Division and a Degree in addition with experience in handling Computer jobs in a Computer installation.

II. for **Central Instrumentation Facility**

9. **Electronics Engineer :** Post one in the scale of pay of Rs. 1100-50-1600/- plus other allowances as per rules of the University.

Essential Qualifications

(i) B.E./B.Tech in Electronics instrumentation OR M.Sc. (Physics) with Electronics as Special paper.

(ii) Three years experience in operation and/or maintenance of Electron Microscope of FTNMR Spectrometer.

Desirable

Knowledge of biological sample preparation techniques in Electron Microscopy.

10. **Senior Technical Assistant :** Post two in the scale of pay of Rs. 550-30-700-35-770-40-890-45-1160/- plus other allowances as per rules of the University.

Essential Qualifications

For **one post**—B.Sc. in Physical Science OR LEE (Electrical/Refrigeration) with 5 years experience in operation of Liquid Nitrogen/Hilium Air Plant.

For **Second post :** B.Sc. with Chemistry/Bio-Science with 5 years experience in operation of a Scanning Electron Microscope/MMR Spectrometer.

Desirable

(a) Honours graduate or M.Sc. in Chemistry/Bio-science.

(b) Knowledge of biological sample preparation techniques in Electron Microscopy.

In case of exceptionally qualified candidates (for all the posts) qualification(s) may be relaxed.

Incomplete applications are liable to be rejected.

Last date of receiving applications is **29-6-85.**

Applicants for the posts at serial 1, 2, 3 and 9 need apply in the prescribed form available from the Office of the Registrar alongwith the requisite fee of Rs. 5/-.

Applicants for other posts may apply in plain paper and in quadruplicate in the proforma herein below.

An applicant must furnish information, supported by necessary documents (attested) in the following proforma:

Sub. Application for the post of————Ref. Advt. No.———
dated————-

1. Name in full (in block letters)
2. Father's Name
3. Present Address
4. Permanent Address
5. Nationality
6. Date of Birth
7. Caste
8. Sex
9. Academic qualification(s) :

(a) Name of exam passed
(b) Year of passing
(c) Div./Class obtained
(d) Name of Board/Univ. from where passed

10. Experience, if any
11. Additional information., if any
12. Names of two referees.

Signature of the applicant in full

P. Banerjee
REGISTRAR

UNIVERSITY NEWS

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Opinions expressed in the articles and reviews are individuals and do not necessarily reflect the policies of the Association

Editor :

M. S. RAMAMURTHY

Supreme Court's Directives

Admissions to Medical Colleges

According to reports appearing in the Press, the Supreme Court has directed all the State Governments to hold an entrance examination for admissions to under-graduate and postgraduate courses in medical colleges beginning in 1985. The outer limit in respect of seats reserved on the basis of domicile restrictions has been fixed at 70%. Thirty per cent of the open seats are to be filled on an all-India basis.

However, with effect from 1986 an entrance examination, on an all India basis, is to be held by the Medical Council of India for admissions to Medical Courses. This would be based on a detailed scheme and syllabus to be formulated by the Medical Council of India.

The Medical Council of India had submitted two schemes, one for regulating admissions to undergraduate courses and another for admission to post-graduate courses.

The Medical Council was directed to supply copies of these schemes alongwith the proposed syllabus to all State Governments within two weeks. The State Governments were directed to send their comments and suggestions within a further period of three weeks to the Medical Council of India. The Council should then formulate the detailed scheme, alongwith the syllabus, before June 25, 1985. The scheme was then to be sent to the Government of India for its approval which is to be done within a period of two weeks.

All the above is a sequel to the Supreme Court's decision taken earlier that not more than 70% seats can be filled on the basis of domicile restrictions and atleast 30% of the open seats should be available for being filled in on an all-India basis. □

Bio-Technological Institute at AMU

A Bio-technological Institute has started functioning at the Aligarh Muslim University. This Institute is the first of its kind and will concentrate in the thrust areas that are presently at the frontiers of modern biology such as genetic engineering, hybridome technology, enzyme engineering, fermentation biotechnology and tissue culture technology. Set up at a cost of Rs. 50 lakhs the Institute will also educate and train students and researchers in computer sciences.

At present twenty research scholars are working in the various areas of Bio-technology. They have made outstanding contributions in their respective areas which are recognised all over the world.

The Institute will conduct research in collaboration with the Universities of Duke and Michigan of U.S.A. with a total grant of Rs. 20 lakhs from United States under the PL-480 Programme for research in "Nitrogen Fixation". Research in this area would help in meeting the growing demands for fertilizer in this country.

The Institute has selected five science students this year for courses in the Bio-technological field.

Several other universities in the country are also planning to introduce the bio-technology course in due course of time. These include, among others, JNU, BHU, Calcutta University and Poona University. □

EDUCATION IN CANADA

G.B.K. Hooja*

While I was in Canada the Carleton University announced its continuing education programme for the following autumn. The list contained several extension (non-credit) courses and several credit courses. Any person could get registered in the extension courses after paying the required fee. Persons over sixty who are known as Senior Citizens there could get themselves registered by paying only half the fee. And this expenditure was deductable from total income for tax purposes. This encourages Senior Citizens to continue their education even after retirement.

I met Wilfred Daphne who had retired from the post of Chairman Tariff Commission the previous year. He had done a course in Physics in the last winter just to update his knowledge in Physics which he had not studied during the last forty years since he left college.

As I informed him about the announcement of the new programme of the Carleton University he began to scan the papers to find out what course he could take up that year.

Similary, those persons who are not registered in the formal degree course can get registered on a part time basis in credit courses towards the degree.

It may be of interest to mention some of the courses, thus available. There were courses on Business and Commercial Management, Development of Human Power, Management Administration and Achievement, Financial Administration, Financial Planning and Budgeting Principles and Systems of Co-operation, Metric System, Consumer Behaviour, Applied Statistics, Bio-Statistics, etc.

There were several courses of general interest such as Religion, Law and Legal Reform, Chemistry and Modern Life Style, Woman, Mind, Body and Changing Role, Current Events, Modern China, Friends of Man, Animal Feed, Photography-Television, Film Production, Spoken French, Jewish Culture, etc.

These courses carried fairly nominal Registration fee ranging from $65 to $125, and were conducted in varying time schedules, from twelve to sixteen weeks.

Now a word about credit courses. There was a course on Music, on French-Canadian Literature, on the Growth of North American Society, Ancient Civilizations of Greece and Rome. There were courses on English Literature from Chaucer to Eliot. The other writers to be studied in this course included Marlowe, Shakespeare, Milton, Pope, Swift, Fielding, Keats, Wordsworth, Browning, Dickens, Tennyson, Eliot, Faulkner and Lawrence. There was a course on Modern Ethical, Social and Religious problems and also a course on Indian civilization and culture, costing fifty dollars and lasting fifteen weeks. It would be interesting to note the topics covered in this course. Beginning with the Introductory lecture, the course included lectures on past and present history, life style, cinema, dance and music, art and culture, arts and crafts, places of tourist interest and tourism, ancient and modern, famous Indians and their contribution, Theosophy, Yoga, Astronomy, Astrology and Palistry, literature and creative writing, wild animal, flora and fauna, and how the country is being governed at present.

Here was a veritable everflowing Sarawati of knowledge. You had only to go to its banks and have as many dips and for as long as you could afford.

Here was no question of compulsory attendance. It was your free will whether to attend the sessions or not. You were entitled to a degree or diploma or certificate if your performance was assessed as adequate. There was no question of using unfair means, nor was there any scope for it. You could complete the course or drop it if circumstances so warranted. On certain conditions you could withdraw from the course and rejoin it during the session. If you withdrew from the course before a fixed date, a part of the fees could be refunded to you. There was no question of teachers not lecturing or students not taking their sessions. They were bound by a contract to complete the session. If for any reason a lecturer was unable to attend

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Vice-Chancellor, Gurukula Kangri Vishwavidyalaya, Hardwar.

Food Science
26 JUN 1985
MYSORE

t o his duties he managed to send a substitute to fulfil the assignment.

In this country it is infradig to depend upon parents after the age of 18. The son of the Governor General too is expected to earn his own livelihood after eighteen. Navin, the son of my friend Jagdish Dhawan worked in a hospital pushing wheel chairs and trolleys to and fro the Operation Theatre and earned about thirty dollars a day. Vijai, the son of another friend of mine, similarly worked at a swimming pool and earned three thousand dollars in the last three months, and now he was registering for a course in Computer Engineering at Waterloo University;. this course included practical work for which he expected to be paid

As in India, in Canada also the university degrees are increasingly getting devalued. There was a time when there was a great demand for persons holding higher degrees, but the situation is now different. The Bachelors of Arts, Doctors in Chemistry, lawyers and engineers find themselves unemployed. Graduates in Geography may be seen distributing mails, graduates in Physics are working as clerks in the Super Market, biologists are running taxies, Zoology graduates are reading water metres and History graduates are working in the railways. All this after spending immense time and resources in obtaining the degree. It is a different matter if you go to the university for gaining or increasing your knowledge but university is no longer a passport to employment.

The economists have declared that this race for degree is unremunerative both for the individual and the nation. It is not necessary to conduct six years long courses to acquire the skills needed by the nation. Of course, in certain fields there is a demand for graduates, such as Dentists, Chartered Accountants, and Nurses. But generally ordinary graduates in Science and Arts are not much in demand. There is a greater demand for middle level technicians.

According to a recent man power survey, it wes found that the annual income of a graduate mechanical engineer, teacher or a graduate in Business Administration was $9,000, but the annual income of a sheet metal worker who had done four years apprenticeship after class twelve could be $17,000. In addition, he would have earned $49,000 during the four-year period of apprenticeship.

In view of this situation the educationists in the West are learning towards community colleges or open universities. Community colleges run short course, generally of the duration of two years. In these courses they prepare the students for special appointment such as Photographer, Hotel Manager, Tourist Guide, Museum Guide, Motor Mechanic. Side by side the student earns his livelihood. In several colleges academic education is combined with professional instruction. If they so desire the students can later join university courses too. Many employers prefer to have the products of the Community College. It is found that these students demonstrate greater interest in their job besides being proficient in their trade.

Not to take a university course or to drop it does not now attract stigma. The term in use now for such a drop out is *step-out*, for by giving up a university course to enter the employment market, a young man certainly proceeds to achieve maturity and gains worldly experience. If he so likes in due course he can acquire further academic qualifications. It is immaterial so long as he is gainfully employed, whether he attains his degree in 9 years instead of four years after High School. Many educationists hold that two years work experience should be a condition precedent for attaining the first degree and that a person should be permitted to join for his postgraduate degree after two years work experience.

The stipulation that the period of education is limited from six to twenty four years of age holds good on longer. It is now universally recognized that the need for education is life-long. In the earlier years all that a young man attains is the key to knowledge and the skill to acquire elementary proficiency in his chosen field of activity.

In our march towards socialism and an egalitarian society, it must be appreciated that the work of a plumber is no less important and valuable than that of a bank manager, and that the job of a fisherman and dairyman is as respectable as that of a judge or a lawyer. Similarly, the work of a truck-repairer is as important as that of a dentist or that of a surgeon. Why should then there be such wide differentiation in the social and economic rewards available to them. ☐

User Instructions in Effective Use of University Library in Teaching Agricultural Education and Research

P.P. Deshmukh*

Paper presented at the ICAR-AALDI Seminar on Agricultural Library and Information Services held at the Bidhanchandra Krishi Vishwavidyalaya, Mohunpur (W. Bengal) from February 4 to 7, 1985.

Introduction

Recent developments in Agriculture and allied sciences have created new pressures on the Libraries of the Agricultural Universities. These serve the needs of Agricultural education, research and extension education. University Library is a necessary adjunct of the teachers' aid and a researcher's tool without which he cannot make the best use in an effective and efficient manner of his time or talents. University Library being an integral part of University must be developed into a dynamic institution where the staff and the students including the research workers come for the advancement of their skills and assistance for change of their attitudes in the desired direction. A well equipped library run by an efficient organisation is in fact the soul of an educational institution. Faculties however well equipped and manned by competent staff would soon find themselves in a morass of intellectual stagnation, backwardness, if those are not supported by a dynamic, modern, up-to-date and efficiently managed library. Development of the University Library, therefore, has no limits, it is one institution which should continuously grow and should never be allowed to relapse into stagnation. With the explosion of the knowledge, it becomes increasingly apparent that faculty members are faced with the difficult and important task of helping students to be self reliant in gathering and using information for their postgraduate studies. Therefore, it is necessary to set the stage for library instruction and usage. This can be done by introducing one credit compulsory course for the post-graduate students in the Agricultural Universities so that instruction on the effective use of the library would result in better utilization of library resources and as such there is a great need of user education programme in support of teaching in Agricultural Universities in our country.

Objectives

No one denies the importance of libraries in the educational programme of the country. Formal education is based on teaching and teaching techniques. It aims at making the learner proficient in his skill. The methods of teaching are rapidly changing. It is no more considered proper to keep the teaching activities confined to the four walls of the classroom. The students need to be brought into contact with the experiences of the past and present by using books in libraries and therefore, the Indian Council of Agricultural Research, New Delhi have requested the Agricultural Universities in India to introduce one credit compulsory course on Effective use of Library Information Services with a view to put a scientific and technical literature to maximum use and to enable the post-graduate students to make effective and efficient use of library in teaching programme.

The objectives of the course are:

(1) to be able to use the library effectively and efficiently;
(2) to be able to find things in the library;
(3) to be able to specify an information needed;
(4) to be able to evaluate the information found; and
(5) to be able to locate appropriate source of information.

In order to achieve the said objectives, the libraries must be organized on functional basis. Unless and until libraries are organized on functional basis, they will not render effective and efficient services to the scientists, readers, and academic staff.

Changing Nature of Agricultural Librarianship

In academic libraries, there has been a great increase in library use per student because of changes in instructional methods and trimester and semester pattern. Formerly, the professor, who often has a rather parochial attitude towards knowledge, depended entirely on a textbook and a canned lecture. Now the student is often encouraged to read more widely in various sources and to do more independent literature searching. This change, alongwith greately accelerated research and a vast increase in literature, has stimulated library development. The library has indeed become a vital instrument for education and research. In addition, Libraries are being operated more effectively through the use of scientific management methods. Great improvements in processing techniques and in bibliographic reference and document delivery services have occurred through the use of new techniques adopted by modern libraries for rendering effective and efficient information services to the students, academic staff and research scientists.

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* *University Librarian, Punjabrao Krishi Vidyapeeth, Akola.*

Role of Library in Higher Education & Research

In India agriculture education is on the threshold of a new era. This new era defines the parameter in which University Libraries are to function for the forceable future. A very serious concern for those libraries that serve the major research oriented University is a continuance of their capacities to provide adequate information resources for academic research. National Education Commission (1964) in its report has recommended the establishment of atleast one Agricultural University in each State of India. National Commission on Agriculture (1976) has recommended implementation of various developmental plans establishing new agricultural complexes and I.C.A.R. Research Institutes and Projects in collaboration with the Agricultural Universities in India. This opens avenues for the establishment of modern, well developed and well organized University Libraries on scientific basis in order to play vital constructive role in the nation building task of agricultural education, research and extension. To maintain communication of new information and technology to the Agricultural Scientists is the main task of the University Libraries in India. Modern, well developed and well equipped University Library plays a constructive role in the process of information transfer to Agricultural Scientists. The main function of the University Library is dissemination of information/knowledge through books and various bibliographical literature stocked in the library, as books are carrier of thought through the thinkers of the past and present. The second main function of the Library is to help the research scientists in his research programme. And the third main function of the University Library is to help implement the instructional programme of the University. These functions of libraries are based on the ideal of bringing the right information to the right scientist at the right time and in the right manner.

In order to achieve the object of libraries, they must be organized on functional basis. Unless and until the libraries are organised on functional basis they will not render effective and efficient services to the scientists, readers and academic staff. The library can function well only when it is organised and administered by competent staff. The library staff can make or mar the progress of the library. Efficient library service pre-supposes adequate staff. After having been organised a library on scientific basis, then only it can function smoothly and render effective and efficient services to the scientists.

Power House of Generation of Information & Transfer of Technology

Libraries in the modern age of science and technology form an intergal part of an educational system. No educational system is complete unless and until it is supplemented by a net work of libraries. The economical, industrial and agricultural growth of a country like India has emphasised the need for the library services to meet the need of both Government and general public. Knowledge is power. Library is a power-house of generation of information and knowledge. Dissemination of knowledge/information is the main function of the library and library generates information through various types of bibliographical resources and literature. The object of library is to make this information/technology and technical know-how available to the agricultural scientists, students, teachers and extension specialists who are the actual users of this information/technology. The scientists throuh extension specialists, transfer this technology and know-how to the farmers who are the actual beneficiaries of this technology. The appropriate transfer of technology in agriculture presupposes adequate study of economic conditions of the farmers who are at the grassroots and the actual beneficiaries. Without libraries neither education nor research work can be carried out in the Universities as well as at the Research Stations and hence development of libraries is the prime need of the current age in order to effect contact between the right book and the right reader at the right time and in the right manner.

Obligations

To achieve this aim there are certain obligations on the part of the Government, authorities, academic community, readers and the library staff. The Government must provide adequate finances to meet the unlimited demand for bibliographical literature from the students and scientists who are engaged in education and research. The University authorities who are at the helm of affairs, must realise the importance of library services as without a University Library no University can function and that is why the University Library is called the heart of the University. The students/readers themselves will have to observe civic responsibilities if the best use of the bibliographical resources are to be made as they are always limited. They are supposed to abide by the Library Rules and Regulations so that libraries can provide maximum services to the users of the library. The library staff which must be well trained and well qualified must render efficient and accurate information services to the readers. Accuracy and neatness are the qualities of library service. They must try to understand the various needs of the readers and they should not serve as an obstacle in between the readers and the books. They must possess all the good qualities which are required in a good librarian who not only serves the reading community but Nation as a whole as libraries are charged with the work of providing information, inspiration and recreation to the readers. In library staff, discipline is a must and if there is discipline, there must be dedication and devotion to the work. These qualities are very necessary in library staff and then only libraries can play an effective role in higher education and research.

User Oriented Information Services and Information Techniques Adopted by Modern Library.

Science and Technology play a vital role in the economic and social development of a country. The importance of scientific information as a major resource essential to the progress at all levels of science and technology is now universally acknowledged. Dissemination of information is an equally important component if benefits are to accrue from it. Once the Research Development findings are reported, the information should be packaged in different forms that can be understood by different types of persons concerned with the usage of the results. In other words, the main objective of any information system should be to cater to various types of users be they scientists, technologists, entrepreneurs, engineers, non-scientists, managers, politicians, farmers or the general public. All these groups view the extent and nature of the scientific information problem differently.

Consequent to increase in R & D activities all over the world, the growth of information, particularly in science and technology, is phenomenal in recent years. In addition, many new disciplines have taken birth. In fact, it is even said that the world is in the midst of an "Information Crisis." It has been estimated that there are over 35,000 scientific journals published in the world today. This does not include a large amount of non-conventional literature.

Generally, users of information have only limited amount of time for scanning all that is published in their area of activity. Typically, scientists may read on an average only 10-12 journals regularly, perhaps 8 or 9 specifically on their subject and the rest general science journals. They also cannot afford the high cost of procurement which has increased to an estimated ten-fold during the last 10 yeaas. Outside their own reading, many scientists rely heavily on informal contacts at work, conferences, symposia and on abstracting journals. So they more often depend upon secondary documentation services which a library or an information centre should build up for effective service. Also these secondary services enable libraries to increase greatly their effective literature coverage. Of late, there has also been a tremendous growth of documentation centre, many using sophisticated computerised systems. AGRIS, NTIS, IFIS etc. are only a few examples. Slowly but steadily, this service has entered the commercial field too. Thus, information as a commodity has become an industry and its price has gone up beyond the reach of many developing countries. With the result, there arose the urgent need for a central coordination system and improvement of international information resources.

Information Technology Techniques

In order to make effective use of library, the modern librarians have adopted various information technology techniques for the benefit of academic community. In addition to the routine technical works of the Librarian of accessioning, classification and cataloguing, the Librarians are rendering documentation services under which preparation of bibliographies, abstracting and indexing of periodicals are done in order to save the valuable time of the scientists. In addition, the modern libraries have adopted Reprography Services under which Micro-filming, Xeroxing and Microfiche services are rendered. The most modern technique adopted for the efficient and effiective use of library information is the "Computerised Information Retrieval Systems" in which Computers are being used to effect contact between the right information and the right scientists at the right time and in the right manner. No doubt the very life of library lies in Reference Service which effects contact between the right book and the right reader but this only is not sufficient in view of the information explosion. The Librarians are supposed to render (SDI) selective dissemination of information services to the readers whereby the important topics of interest of the scientists are brought to their notice immediately.

Need for User Education and Reader Instruction

The Information Scientists/Librarians have been talking and writing about the need for reader instruction for many years. There are Agricultural Librarians in our country who are making reader instruction/User education programmes work in view of the vital role played by an Agricultural

CENTRAL INSTITUTE OF ENGLISH AND FOREIGN LANGUAGES

HYDERABAD-500007

DEPARTMENT OF CORRESPONDENCE COURSES

Advertisement No. IV/85

The last date for receipt of applications for admission to one year **POST-GRADUATE CERTIFICATE COURSE IN THE TEACHING OF ENGLISH** (Through Correspondence—1985-86 session) is extended to **5th July 1985** with a late fee of Rs. 20/-.

K. Jayashankar
REGISTRAR

University Library in higher education and research as a result of the adoption of changing pattern of educational system. Many students today for post-graduate courses are inadequately equipped with the basic bibliographical approach to their subjects. Any thing which helps to direct them along these paths is a step in the right direction. One particular reference tool or bibliography is not the only one which is of importance in that particular field. Student's main duty is to find various types of bibliographical resources in view of the fact that every year tremendous amount of literature is published and this has created problems for researchers.

The library and information science departments do very little to train future librarians for the job of teaching library use. The introduction of the one credit compulsory course "Scientific Report Writing and Use of Library" in agricultural Universities in India for Post-Graduate students has helped them in making effective and efficient use of library since the course curricula make them aware of the various information technology techniques adopted for dissemination of information available through various types of bibliographical resources in the library. Hence, the user Education or Reader Instruction Programme is a must in the agriculture Universities for effective use of library in teaching agriculture education.

Conclusions

(1) University Library being an integral part of University must be organised on functional basis and developed on the scientific lines for the effective use by the readers.

(2) There is a great need for users education programmes in support of teaching and research in college and agriculture University libraries in the country.

(3) It is recommended that Film-Library and audio-visual materials for an effective promotion of user education should be developed.

(4) The Reprography Section of the library should be developed with the latest automatic Xerox machines.

(5) The I.C.A.R. Norm for introduction of one credit compulsory course "Scientific report writing and use of library" for Post Graduate Students in our Agricultural Universities must be adopted forth with.

(6) The Agricultural Universities should hold Summer Institute on 'Information System For Agricultural Sciences and Technology' to update the competence of Agricultural Librarians in the country in the area of user education. □

SCHOOL OF PLANNING AND ARCHITECTURE

(Deemed to be a University)
4-Block-B, Indraprastha Estate,
NEW DELHI-110002

Applications for Admission to Bachelor's Programme of the School for the Year 1985-86 are invited :

ADMISSION QUALIFICATIONS

ARCHITECTURE (FIVE YEARS, FULL TIME, 68 SEATS)

(i) Senior School Certificate (on completion of the 10+2 pattern, 12 Year Course) of the Central Board of Secondary Education, New Delhi or any other examination recognised as equivalent with passes in (a) Mathematics and Physics at the +2 stage and (b) English and General Science including Chemistry at 10th stage.

ELIGIBILITY

Candidates with atleast 60% of aggregate marks (55% in the case of SC, ST and other reserved categories) are eligible to apply.

SELECTION PROCEDURE

Selection for admission to the Bachelor's programme will be made through an Entrance Examination comprising of (i) General Awareness and Scholastic Performance Test and (ii) Aptitude Test—designed to assess candidates perception in terms of space and proportions which will be held on **15th July, 1985 at 11** A.M. in the Examination Hall of the Union Public Service Commission, Dholpur House, Shahjahan Road, New Delhi and at School of Planning and Architecture, New Delhi.

RESERVED SEATS

SC. 15%, ST. 5%, Children/Widows of Armed Personnel killed/disabled in action 5%, Physically handicapped 5%, and candidates belonging to educationally deficient States 10%, of the total sanctioned intake.

GENERAL INFORMATION

(i) Medium of Entrance Examination and Instruction is English.
(ii) Foreign nationals are required to apply to the Govt. of India through their diplomatic channels.

IMPORTANT DATES

	Bachelor's Programme
1. Issue of Forms commences on	4.6.1985
2. Last date for issue of Application Forms against payment of Rs. 20 in cash/Indian Postal Order in favour of School of Planning and Architecture	
(a) At School's Counter	27.6.1985 (2.00 p.m.)
(b) By post	25.6.1985
3. Last date for receipt of Application Forms	29.6.1985 (5.00 p.m.)

SPA/3/AE/85 REGISTRAR

UNIVERSITY OF ROORKEE

ROORKEE-247667

NOTICE FOR ADMISSION TO POSTGRADUATE PROGRAMMES

Applications are invited for admission for the session 1985-86 commencing on August 1, 1985, in the following Post-Graduate Programmes at the University of Roorkee:

MASTER OF ENGINEERING/ARCHITECTURE & PLANNING (1½ YEARS)

Departments:

1. Chemical : Advanced Transfer Process/Process Engineering & Plant Design/Industrial Pollution Abatement.
2. Civil : Building Science & Technology/Environmental/Geotechnical/Hydraulic/Remote Sensing/Structural/Survey & Photogrammetric, and Transportation Engg.
3. Earthquake : Soil Dynamics/Structural Dynamics
4. Electrical : Measurement & Instrumentation/Power Apparatus & Electric Drives/Power System Engg./System Engg. & Operations Research
5. Electronics & Communication : Communication Systems/Control & Guidance/Microwave & Radar/Solid State Electronics/Computer Science and Technology.
6. Mechanical & Industrial : Applied Thermoscience/Machine Design/Production Engg./Welding Engineering.
7. Metallurgical : Extractive Met./Physical Met./Industrial Met.
8. Architecture & Planning : Architecture/Urban & Rural Planning.

MASTER OF TECHNOLOGY (3 Years)

9. Earthsciences : Applied Geology/Applied Geophysics.

MASTER OF SCIENCE (2 Years)

10. Earthsciences : Applied Geology
11. Mathematics : Applied Mathematics
12. Centre of Bio-Sciences : Biosciences
13. Chemistry : Chemistry
14. Physics : Physics

MASTER OF PHILOSOPHY (1 Year) : Mathematics/Physics—in Instrumentation of Material Science.

POST-GRADUATE DIPLOMA (1 Year) : Building Science & Technology/Earthquake Engg./Earthquake Tech./Industrial Management/Automatic Computation.

Minimum Qualifications : In the appropriate discipline, a Bachelor's Degree for Engineering/Architecture/Science/a Master's Degree for M. Phil. The details are given in the prospectus.

Scholarships : Scholarships in M.E. would be available to those who have qualified through GATE.

Hostels : As the University is residential students have normally to stay in the Hostels

Applications : The candidates should apply in the prescribed application form with attested copies of the necessary enclosure. *Separate Application Forms should be sent for courses in different Deptts.* Last date of receipt of the application form, complete in all respects is JULY 2, 1985.

General Informations :

1. Application forms together with details of the courses, eligibility conditions, and the number of seats available for each course are contained in the *Prospectus* which can be obtained free of cost from the Office of the Assistant Registrar (Academic) University of Roorkee, Roorkee-247667, in person or by sending a self addressed 10″ x 4½″ envelop with 55 paise stamps affixed to it.
2. Separate Application is to be sent for admission in each department.

Shri Venkataraman Addresses Convocation of GRI

Excerpts from the Convocation Address delivered by Shri R. Venkataraman, Vice-President of India, at the Gandhigram Rural Institute, Gandhigram.

Convocation

"..As I was on my way to Gandhigram, I reflected upon the priceless legacy you have inherited from those who evolved and developed the concept of a rural university. Mahatma Gandhi often said that the soul of India resides in the villages. Logically, it is here that the social revolution he worked for should commence so that it should gradually change the composite image of our people and of the country. He advocated ruralisation of higher education which then was, and continues to be, the exclusive preserve of metropolitan and selected urban areas. Dr. S. Radhakrishnan, one of our most eminent educationists prepared the blueprint for a rural university in 1949 on the lines conceived by Gandhiji. The principal objective they had in mind was to reverse the flow of rural youth for knowledge and learning into the cities, to which employment seekers as well flocked. In free India, they were convinced, higher education had to be brought to the doorsteps of villagers.

"Most of us will agree that the right setting for the universities, the temples of learning as they are, should be rural, far from the madding crowd of cities. Our gurus and sages also founded centres of learning in serene, sylvan surroundings.

"The blueprint for the university was translated into a programme of action and given a practical shape when ten rural Institutes of higher education were organised by the Government of India. The Gandhigram Institute was one of them. This was to be the first phase of a countrywide programme for imparting an all-round, balanced education to the people in the villages where the real India lives. The idea for a rural educational centre also enthused Dr. T.S. Soundram in 1947 who founded a school for basic education from the nursery to secondary level at Gandhigram.

"The imprint of these three leading personalities of contemporary India, the crusaders for service to rural youth, is sharply etched on the Gandhigram canvas of education. Though they are no more with us, their example is and should continue to be a perennial source of enthusiasm and inspiration to us. Gandhiji had merged his identity with the peasantry and workers. Dr. Radhakrishnan was the embodiment of an ideal teacher. Dr. Soundram created this wonderful organisation with children's home, schools, girls training institutions and family health centre a unique complex in the whole of India. It is a testimony to the success of your "experiments" in education that in 1976 the Institute was recognised as a University.

"Before me are about 250 youth who are receiving diplomas and degrees after having imbibed the Gandhian philosophy of work ethic and assisted in giving a practical shape on a micro scale to some of Gandhiji's ideas. On you now depends how the nucleii nurtured in Gandhigram should be multiplied in other parts of the country, taking into account the local conditions traditions and customs. You are among the 8,000 pioneers who have been trained and educated at the Gandhigram Institute since its inception about 30 years ago. Among you today is also my esteemed friend Professor K. Arunachalam, a dedicated Gandhian, who has been awarded the Honorary degree of Doctor of Letters for his contribution to Gandhian studies. Together with your predecessors you must now embark on the second phase of the programme for bringing higher education to the villages. I congratulate you most heartily on the completion of your studies. But I should also like to say that you are about to enter the laboratory of humanity strewn with impediments. You must remain steadfast to Gandhiji's ideals. Indeed, in a way your work has just begun the struggle to implement the social reform programme Gandhiji initiated.

"As Gandhigram is a symbol of significant experiment in rural higher education, I propose to analyse the components of the educational system in your institute, highlighting those which can be adapted alsewhere. The "courses of study" or rather practical "experimentations" at the Institute include rural education, development, integration of academic study, productive work, community life and village extension. It offers a package containing the art of learning for knowledge, work opportunities for acquiring skills, community life for social responsibility, besides action-based research and extension for rural development. Special emphasis is placed on extension service and field work, rural health, and evolution of new approaches to the problem of population—a part of the Gandhigram heritage. Its record is outstanding. In a block, I understand, the birth rate fell from 35 per 1000 to 21 per 1000, the target fixed for the entire country under "Health for All by 2000 AD". For this signal achievement Dr. Soundram will always be remembered with admiration and gratitude.

"As all the courses offered an extension component, both students and teachers go to the villages and experiment with the ideas they study in classrooms. The courses are also need-based and the graduates are expected to play a useful role in voluntary organisations or private industry to serve the people. It is claimed, and rightly so, that Gandhigram has developed a successful model in rural extension—a quadrangular model where village planning committee, government development departments and financial institutions work together. This has accelerated the process of development and enabled villagers to move towards basic national goals, namely, full employment, control of population, eradication of illiteracy and abolition of poverty. Some of Gandhigram service villages are nearing 100 per cent employment, zero population growth rate, 100 per cent literacy and zero poverty.

"I also commend the system of research conducted in the Institute, as it is oriented to the practical needs and problems of the people in the surrounding region. The various studies made relate to practical issues in agricultural economics and other areas of rural development. At a micro-level planning, "resource atlases" are prepared for the villages, blocks and districts, scientifically and systematically assessing the natural resources in a particular area and evolving guidelines for development.

"A practical production programme, under which goods valued at Rs. 6 lakhs are produced every year by students and supporting staff with the emphasis on entrepreneurship and self-employment, is welcome. Equally interesting is the Gurukula system which enables a group of students to work closely with teacher who acts as a "friend, philosopher and guide" to them. He also helps them to choose a vocation and smoothens the transition from "the world of learning" to "the world of work".

"Gandhigram Institute stands for a casteless and classless society in accordance with the Gandhian ideals of equality. The basic emphasis is on moral and social values without which no nation can really progress. Through sarvodaya prayers and other cultural and spiritual programmes, Gandhigram instills higher values in the students. Its course for national integration and unity is noteworthy. It is a mini India.

"I am particularly happy to note that the Institute has organised a Shanti Sena course for training in non-violence. Such a course in peace science, including problems of disarmament and world peace, is timely.

"All this has attracted notice outside and I am glad to find that students from Asia and Africa are studying in Gandhigram, giving it an international character.

"This endeavour to concretise the Gandhian concerns in the Institute's campus is laudable. But it has become also necessary to nderline some facts of his programme in our machine age.

"For Gandhiji, dignity of labour was an integral part of his worldly religion. Education ennobles the mind. It must also attach due value of manual work. Gandhiji said: "whatever may be true of other countries, in India at any rate where more than 80 per cent of the population is agricultural and another 10 per cent industrial. It is a crime to make education merely literary and to unfit boys and girls for manual work in afterlife. Our children must from their infancy be taught the dignity of such labour",

"This lesson on the dignity of labour should never be forgotten. It is a golden frame for mental attitudes and intellectual pursuits. Throughout the length and breadth of India so much has to be done, some of it by machines and with the help of scientific and technological aids but much more with human hands which no machine can ever surpass. A balanced development of mind and body in harmony with soul or spirit is the key to enrichment of human personality. This is also the key to good education which must in the ultimate analysis help humanity to rise to a higher level of consciousness. To quote Gandhiji again :

"Unless the development of the mind and body goes hand in hand with a corresponding awakening of the soul, the former alone would prove to be a poor lopsided affair. By spiritual training I mean education of the heart. A proper and all-round development of the mind, therefore, can take place only when it proceeds **pari-passu** with the education of the physical and spiritual faculties of the child".

"Our greatest challenge today is to work for national integrity, social morality and humanism. These are our fundamental needs. As you, alumni of this Institute, go out to the various parts of the country to engage yourselves in the work assigned to you, you must learn to live as a part of a family. Gandhiji once described how he lived as a "father" among those he worked for :

"I had always given the first place to the culture of the heart or the building of character, and as I felt confident that moral training could be given to all alike, no matter how different their ages and their upbringing, I decided to live amongst them all the twenty-four hours of the day as their father. I regard character-building as the proper foundation for their education and, if the foundation was finally laid, I was sure that the children could learn all the other things themselves or with the assistance of friends".

"I have often wondered whether it is not possible to spread these "experiments with truth" to other parts of the country and even outside. Nothing is impossible if we set about the task with a sound programme. The three-language formula, namely, regional, national or Hindi and link or English languages should be the sheet anchor of our educational policy. The selection of students and teachers for Gandhian Institutes should be judicious that they may turn out committed young people devoted to social revolution. I recently visited the North Eastern region of our country. It is breathtakingly beautiful. Even in these remote regions, Gandhigram was known, and I was approached whether any of the trained graduates of your Institute could be encouraged to go to such States as Nagaland, Mizoram and Arunachal Pradesh. In many other areas as well the Gandhian cadre is needed urgently.

"A Nobel Prize winner and a physicist recently ridiculed that nuclear devices, which he described as "annihilators" with the object of "omnicide" are characterised as "arms". This is a perversion of truth as arms, conventional arms, are lethal only in limited areas, while Nuclear devices spell wholesale destruction of man. The Institute should also expand and strengthen linkages with institutions working in the areas of peace and development in the world. If we bring together all those who are working in accordance with the Gandhian ideals—and there are now thousands all over the world, we shall have reinforced the growing movement for world peace.

ASATHOMA SAT GAMAYA
TAMASOMA JYOTIR
GAMAYA
MRITYOMA AMRITAM
GAMAYA
Lead us from :
UNTRUTH TO TRUTH
DARKNESS TO LIGHT
DEATH TO IMMORTALITY"□

Indian Institute of Technology, Bombay

In pursuance of the Stockholm Declaration of 1972, a few faculty members of the Indian Institute of Technology, Bombay got together informally to work for the cause of environment in 1974. The Institute recognized their efforts and introduced formal interdisciplinary M.Tech. and Ph.D. programmes in 1977. The Environmental Science and Engineering (ESE) Group has since trained over 60 M. Tech. 2 Ph.D. students. Presently, 9 M. Tech. and 10 Ph.D. students are undergoing interdisciplinary training relevant to Environmental Management in the country.

The Institute submittted a proposal to the Ministry of Education in December 1982 for the establishment of a 'Centre for Environmental Science and Engineering (CESE)' under its scheme for financial support to the areas of emerging technologies. The first part of the proposal (which concluded with the VIth National Plan) was approved by the Ministry and a sum of Rs. 30 lakhs (in 2 instalments) sanctioned to support teaching and research activities in this vital emerging area. The Ministry has also committed to support the recurring expenditure on this activity in the VIIth National Plan.

The Institute has, in addition, received substantial financial support through sponsored research (Rs. 50 lakhs) and developmental projects (Rs. 20 lakhs) from national and international agencies to strengthen its infrastructural base in ESE.

The Group has organized national and international workshops/seminars/training programmes to share its experience with agencies related to Environmental Management in India and other countries in SEA region. Amongst the more prominent of this activity have been the Indo-French Workshop on Water Quality Management in January 1983, Silver Jubilee International Seminar on Environmental Management in February 1983 and WHO sponsored month long international training programme on Air Pollution Monitoring and Management in October 1984.

The Group has been involved in R and D work of relevance to the industry in particular and society at large at the request of prominent national and international agencies, viz. SIDA, World Bank, UNEP, UNICEF, Pollution Control Boards, DOEn, DNES, State Governments and prominent private and public sector industries. The Group specializes in Mathematical Modelling, Optimization of Environmental Engineering Systems, Air and Water Quality Management, Industrial Wastewater Reuse, Biogas Technology from Renewable Resources and Environmental Impact Assessment. The Group has also participated wi h distinction in UNEP, UNCHS, UNESCO, World Bank, SIDA, Ministry of Education, DOEn, NEERI and DNES Missions/Research Committees/Task Forces.

The Group is pursuing collaborative research projects since 1983 with ENPC, France and University of Newcastle Upon Tyne, Britain. The UNEP Office for Asia and the Pacific has incorporated the Group in its Network for Industrial Environmental Management.

The Group recently conducted two questionnaire surveys related to the placement of postgraduates in ESE from the Institute (since 1979) and also on the projected demand in the country for trained manpower in ESE. The analyses of the data collected during the surveys reveal that our postgraduates are fruitfully employed in design, development and research activities to serve the cause of environment and that a substantial job potential exists for graduates of ESE in view of the International and National commitments to environment. □

HARCOURT BUTLER TECHNOLOGICAL INSTITUTE, KANPUR

Admission for 1985-86

Applications are invited for admission to Post-graduate and Doctoral Programmes leading to the degrees in the disciplines mentioned below :

1. **Postgraduate Programme (Full time) (18 months course)**	**Intake**
(a) (i) M. Tech. Chemical Engineering (Design).	5
(ii) M. Tech. Chemical Engineering (Practice).	5
(b) M. Tech. Chemical Technology	
(i) Biochemical Engineering	5
(ii) Food Technology	5
(iii) Oil Technology	5
(iv) Plant Technology	5
(v) Plastic Technology	5
2. **Postgraduate Programme (Part time)/ M. Tech. Engineering (3 year course)**	
(i) Chemical Engineering (Design & Practice)	10
(ii) Civil Engineering.	10
(iii) Electrical Engineering	10
(iv) Mechanical Engineering (Mechanical Engineering Design and Industrial System Engineering)	20

Minimum Qualifications

(i) For Admission to M. Tech. Chemical Engineering and Biochemical Engineering (Full time):

The candidates for admission to M. Tech. Chemical Engineering and Biochemical Engineering must have qualified at the Graduate Aptitude Test in Engineering (GATE) held on Feb. 2, 1985 or earlier and must possess a Bachelor's degree in the appropriate discipline from the Kanpur University or from any other University or Institution recognised by-law or its equivalent.

(ii) For admission to M. Tech. Chemical Technology (Full Time) in Food, Oil, Paint and Plastic Technology :

The candidates for admission to M. Tech. Chemical Technology in Food, Oil, Paint and Plastic Technology must possess a Bachelor's Degree in Chemical Engineering or Chemical Technology or its equivalent with 60% marks and above. The candidates who have not qualified for appeared at the GATE are also eligible for admission in the Chemical Technology courses mentioned above.

The candidates who have qualified at the GATE in Chemical Engineering are also eligible for admission in Chemical Technology (Food, Oil, Paint and Plastic).

Candidates who have been successful at the GATE but whose results in the qualifying examination have yet to be declared are also eligible to apply provided they complete all requirements for the degree by 20-7-1985.

Separate applications are to be submitted for each course of study.

Sponsored Candidates

Candidates sponsored by recognised Research and Development Institutions, Public Sector Undertakings, etc., and fully financed by their employers will be considered for admission in M. Tech. (Full time) courses without qualifying at the GATE provided they have secured in the qualifying examination marks equivalent to 60% and above.

Candidates who have not qualified at the GATE are also eligible for admission in case seats are available and the candidates possess more than 60% marks. They shall, however, not be eligible for scholarship, except for courses in Food, Oil, Paint & Plastic Tech.

The merit of the candidates for admission to M. Tech. programme will be determined on the basis of score obtained in the GATE/Qualifying examination.

(iii) For admission to M. Tech. Engineering (Part time) in Chemical, Civil, Electrical and Mechanical Engineering:

For admission to above courses, the candidate must possess a Bachelor's degree in appropriate discipline or their equivalent. AMIE (Section A and B by examination) holders are also eligible for admission. The candidates must produce a certificate that they are employed.

3. Doctoral Programme

At present Doctoral Programme is being offered in the following disciplines leading to Ph.D. degree. Students admitted in Doctoral programme may be required to assist the departments in teaching and other professional work.

(a) **Basic Science**: Physics, Chemistry & Mathematics.

(b) **Technology**: Biochemical Engineering, Food, Oil, Paint and Plastic Technology.

(c) **Engineering**: Chemical, Civil, Electrical and Mechanical Engineering.

Minimum Qualification

For admission to Doctoral Programme in any of the above mentioned disciplines, the candidate must possess Master's Degree in the appropriate discipline in FIRST CLASS.

Financial Assistance

All candidates, who will be admitted to M. Tech. full time course are eligible to a scholarship of Rs. 1000/- per month except in Chemical Engineering where the amount of Scholarship is Rs. 400/- per month at present but it is likely to increase to Rs. 1000/- per month. No scholarship or any financial assistance is available for M. Tech. Part Time students.

How to Apply

Application for admission to any of the above programmes should be made on the prescribed application form available from the Office of **Officer on Special Duty**, Academic Section, H.B. Technological Institute, Kanpur-208002 either at the counter or by remitting a sum of Rs. 5/- per set in the form of crossed Indian Postal Order drawn in favour of the **DIRECTOR, HBTI**, KANPUR and payable at, HEAD POST OFFICE, NAWABGANJ, KANPUR together with self addressed and stamped envelope for Rs. 3.85 (for sending by Registered Post) of size 23 cm x 10 cm and superscribed "**ADMISSION**".

Separate applications are to be submitted for each course of study.

Last Date : 15-7-1985

Applications complete in all respect should reach the Officer on Special Duty, H.B. Technological Institute, Kanpur-208002 latest by **15-7-1985.**

A.K. Vasishtha
DIRECTOR

ANNA UNIVERSITY

MADRAS-25

Advt. No. 11925/L3/85 **Dated : 22.5.85**

Applications are invited in the prescribed form from candidates belonging to S.C./S.T. for recruitment as :

TEACHER TRAINEES

QUALIFICATION	:	B.E. or B.Tech.
STIPEND	:	Rs. 1,300 per month
AGE LIMIT	:	27 years
TRAINING PERIOD	:	3 years

During the period of training the trainees will be provided with an opportunity to qualify for Master's Degree on a part-time basis for a period of three years.

On successful completion of the training, the trainee will be considered for appointment as Lecturer in the scale of pay of Rs. 700-40-1100-50-1600.

Application form and other details can be had on requisition accompanied by a crossed postal order for Rs. 5 (Rupees five only) dated not earlier than 1-6-85 in favour of the Registrar, Anna University, Madras-25, together with a stamped self addressed envelope (Rs. 1.20) of size 22 cm x 10cm. Requisition for application form and other details will be entertained upto 25.6.85

Last date for receipt of completed application form is **29.6.85**

REGISTRAR

MINISTRY OF EDUCATION

(EXTERNAL SCHOLARSHIPS DIVISION)

YUGOSLAV GOVERNMENT SCHOLARSHIPS : 1985-86

Applications on plain papers are invited from Indian nationals for the award of four short-term scholarships offered by the Government of Yugoslavia for 1985-86, in the following subject fields:

(1) HOP CULTIVATION (duration 12 months);
(2) ELECTRONICS (duration 12 months);
(3) CERAMIC AND GLASS TECHNOLOGY (duration 9 months); and
(4) NAVAL ARCHITECTURE (duration 9 months).

Educational Qualifications : For Sl. Nos. (1) to (3) : Uniformly good academic record with 60% or above marks at Master's Degree in the subject concerned or related fields. For S. No. 4 : Uniformly good academic record with 60% or above marks at B. Tech./B.E.Degree.

Essential Experience : At least two consecutive years' teaching/research/practical experience as on 1-10-1985 in the subject field selected after the prescribed educational qualifications (M. Phil./Ph.D. will be counted towards experience).

Age Limit : 33 years as on 1-10-1985. Relaxable upto 2 years in upper age limit for Scheduled Caste/Scheduled Tribe candidates. The upper age limit and experience may be relaxed by not more than 3 months at the discretion of the Selection Committee in the case of brilliant candidates.

Value : It carries the following allowances payable by the Government of Yugoslavia : Adequate maintenance allowance, free accommodation, tuition fee, and free medical care when necessary.

Passage Cost : The cost of passage from India to Yugoslavia and back has to be borne by the candidate or his/her sponsorer/employer. Subject to availability of funds, the passage cost may be met by the Government of India, provided the candidate is eligible under the rules.

Note : (i) The following must be attached with the application: (a) Attested copy of the certificate certifying the date of birth; (b) Attested copy of marks sheet of the qualifying examination; (c) Attested copies of all degrees/diplomas/certificates, etc. (ii) Candidates with equivalent foreign qualifications will also be considered; (iii) Master's Degree means M.A./M.Sc./M.Tech., but not M.Phil or pre-Ph.D; (iv) Where grades are awarded, the conversion formula of the University/Institution must be indicated; (v) Candidates must furnish a clear and precise programme of study/research in Yugoslavia; (vi) Application in the subject-fields other than those specified above will not be considered; (vii) Candidates who have already been abroad for study/specialisation/training either on a scholarship or on their own are eligible to apply only if they have been in India for at least three consecutive years after their return from abroad; (viii) Candidates should have adequate knowledge of the geographical situation, culture & heritage of India & Yugoslavia; (ix) Applications of candidates who are at present abroad, will not be considered; (x) Candidates who do not possess the requisite qualifications need not apply; (xi) The application form should be accompanied by a crossed Postal Order of Rs. 5 (and Rs. 1.25 p. in case of Scheduled Caste/Scheduled Tribe & other backward classes) payable to the Secretary, Ministry of Education, New Delhi; (xii) Applications which do not contain Postal Order will be considered incomplete and will not be considered.

Candidates should apply for the above scholarships on a plain paper, furnishing the following detailed particulars to the *Secretary, Ministry of Education, External Scholarships Division, Section E.S.1., Room No.* 516, *'B' Wing, Shastri Bhavan, New Delhi*-110 001, by **25th June, 1985**. Applications received late will not be entertained.

FORMAT OF APPLICATION

1. Name of the Scholarship Scheme : Yugoslav Government Scholarships, 1985-86.
2. (a) Subject; (b) Sub-subject.
3. Name of the candidate (in Block Letters), with full mailing address.
4. Date of birth and the State to which the candidate belongs.
5. Whether a member of SC/ST or a tribal or *aboriginal* community? If so, give full particulars.
6. Academic record starting from High School/Higher Secondary :

Name of the University/Board/Institution	Exam. (s) Passed	Year of passing	Division/Class with position, if any*	Percentage of marks obtained & position, if any	Subjects taken

* In case no Division/Class is awarded and only grading is done, the conversion formula adopted may be mentioned.

7. Details of professional/practical training and research experience, specifying the period and number of papers published, previous employment with name and date of employment, if any.
8. Nature of the present employment with the date of appointment, designation and the address of the employer.
9. Have you been abroad? If so, give full particulars of the country and the period. Also mention the year of return to India.
10. Proposed programme of study/research/training, specifying : (i) the work in which engaged at present; (ii) nature and programme of study/research desired; (iii) future plans/prospects after the proposed studies/research; and (iv) how are these related to the technical or economic development of India?
11. Crossed Postal Order of Rs. 5 (Rs. 1.25 paise in case of SC/ST candidates etc.) (No. & Date of postal order to be given) may be attached with the form with passport size photograph (one copy).

Note : Employed persons must send their applications fully sponsored by the employers. However, advance applications will be considered provisionally pending sponsorship by employers.

Place :

Date:

(Signature of Candidate)

davp 85/80

Workshop on Objective Type Test at Aligarh Muslim University

A four-day Workshop on "Objective Type Test" was conducted at the Aligarh Muslim University with the assistance of experts from the NCERT. The Workshop was inaugurated by Shri Syed Hashim Ali, Vice-Chancellor of the University. In his address Shri Syed Hashim Ali reiterated the importance of workshop and urged that the workshop should formulate the future plan of action aiming at improvement in the examination system of the University.

In his keynote address, Prof. Pritam Singh of the NCERT invited the attention of the faculty members and administration for the urgent need of improving the testing techniques with special reference to teaching and learning process.

Shri N. Moideen, Co-ordinator of the workshop explained the main objectives of the workshop and said that the purpose of the workshop was to improve methodology of evaluation with parallel improvement in teaching and learning and to acquaint with the latest techniques of evaluation, objective testing and examination. He also stressed the need for the integrated approach and to treat evaluation, teaching and learning as integral part of a unified system instead of teaching them in isolation.

In the working sessions, 46 faculty members drawn from nine departments of the University constructed a number of multiple choice items in all the subjects. Prof. Pritam Singh, Dr. A.D. Banerjee, Dr. J.P. Agrawal, Dr. Ved Prakash, Dr. Prabhakar Singh, Dr. Sisodia, M.R. A.V. Jafri and Prof. Munir Ahmad guided different groups while constructing the objective type items.

After detailed discussion the workshop proposed the following plan of action for implementation :

(1) Deans of faculties may organise decentralised workshops at their faculty level for giving orientation to the teachers for construction of objective type items.

(2) A good library containing the text books starting from Class X to the degree level, the books so far published on the evaluation methodology and examinations and a collection of all the objective type items so far framed by different agencies may be established in the office of the Controller for reference.

(3) There should be always a link between teaching and evalaution and the items should be so framed as to bridge the gap between these two.

(4) A certain portion of the question papers for the University examinations should be earmarked for objective type items. In order to train the students in power of expressions and arrangements of ideas long answer type of questions should also be framed.

(5) For all University examinations it is suggested that the objective type, short answer type and descriptive type questions should be in the ratio of 25:25:50 for every subject as far as possible. The next workshop should concentrate on the design of the question paper with this ratio of questions.

(6) Similar workshops should be conducted mainly aiming at language and humanities so that proper training should be imparted to all concerned for framing objective type items in the area concerned.

(7) Aligarh Muslim University has taken the initiative to bring out the talent in the teaching community in the evaluation methodology with technical assistance of NCERT and other agencies available in the country. The University should now take the leadership in this field.

(8) Editorial teams for different subjects consisting of two to three experts for each shall be formed for constructing item bank. Besides, a general team of moderators will also be formed with experts from the University as well as outside agencies to validate the items.

(9) The evaluation technique should be developed in order to improve the validity and reliability of examinations along with objectivity in evaluation.

GKV establishes Ramanujan Mathematics Association

With a view to popularizing mathematics and promoting mathematical activities & inter-disciplinary understanding, Shri G.B.K. Hooja, Vice-Chancellor of Gurukul Kangri Vishwavidyalaya, Hardwar has inspired to establish a mathematics association in the memory of great Indian mathematician Srinivasa Ramanujan Ayengar (Dec. 1887-April 1920), FRS. The Vice-Chancellor who is also the patron of the Ramanujan Mathematics Association inaugurated the activities of the association on May 8, 1985. He emphasized the need for such associations in other disciplines as well.

Professor Mohan C. Joshi, I.I.T., Bombay, while delivering the inaugural talk "Computer Oriented Approach towards Calculus", stressed the need for starting computer science courses in GKV. It may be mentioned that proposals have already been sent to the UGC for establishing a computer centre in the Vishwavidyalaya.

New courses planned at Bhagalpur Varsity

Addressing the Senate meeting, the Vice-Chancellor of Bhagalpur University, Dr. M.Q. Towheed, said that the university had decided to introduce journalism and mass communication courses in order to provide job-oriented courses.

The Vice-Chancellor also informed the Senate that the Ministry of Agriculture and Co-operation has agreed to sanction the establishment of an agro-economic research centre under the rural economics and co-operation department of the university. A diploma course in business management and a coaching centre for competitive examination is also likely to be started soon, the Vice-Chancellor added.

Dr. Towheed further said that the Department of Environment has recently sanctioned Rs. 10 lakhs for a project for integrated study of the river Ganga by the Botany, Zoology, Physics, Chemistry and Geography Departments of the university.

DBHPS to start two PG diploma courses

The Post Graduate and Research Complex, Dakshina Bharat Hindi Prachar Sabha proposes to introduce two Post Graduate Diploma Courses in Translation and Computer and Word Processing from July 1985. The Translation Diploma will consist of theoretical as well as practical aspect of translation in various fields, i.e. official, scientific, commercial and literary etc. The Computer Diploma will consist theoretical and practical knowledge of computer and its operation for linguistic purposes. For this programme the Government of India has given its consent to provide two micro computers to the Institute.

The Hindi, Telugu, English courses will be started at Hyderabad and Hindi, Tamil, English courses at Madras.

Punjabi University plans internal evaluation system and examination reforms

The Punjabi University, Patiala has decided to introduce an internal evaluation system for Post-Graduate courses during the 1985-86 academic session which would make the examination an intergal part of the education itself.

The University has been actively supporting the cause of improving educational standard and of examination reforms. Last year, it introduced semester system in all the departments at the University campus. Under the internal evaluation system, there would be three to four examinations during each semester. The teachers themselves would conduct and assess them. Adequate measures to monitor the whole operation are being finalised and the interests of students are fully protected.

The University is also considering to re-structure undergraduate courses so that the students receive knowledge in areas of specialisation as well as of immediate applicability.

Asiatic Society to become model Varsity

The Government of India, it is reported, has approved the proposal of the Asiatic Society, Calcutta, to become a model university for oriental and indological studies. The university will start functioning with effect from July this year and the Government has approved a plan with an outlay of Rs. 4 crores in the first instance.

To start with, the university will introduce an M.Phil course from the first week of July.

According to Dr. Chandan Roy Choudhury, General Secretary of the Society's General Council, the teaching faculty will be started with two eminent foreign experts in oriental studies as visiting professors, six professors for Indology and four visiting fellows from abroad.

The Society has also decided to increase the number of research fellows from 15 to 40. It has also decided to provide more facilities and enhance the monthly scholarship from Rs. 600 to Rs. 1000. In addition a sum of Rs. 3000 to Rs. 5000 would also be provided for meeting the contingent expenses of the fellow.

MP Vice-Chancellors meet

The Co-ordination Committee of Vice-Chancellors of the Universities in Madhya Pradesh, which met in Panchmarhi on May 27, 1985, has decided to follow the guidelines set down by the University Grants Commission in the matter of examinations. It decided that supplementary examinations in only one subject should be allowed. There will be no second examination, the optional papers will be regrouped and the gap between the two question papers in the examination will be reduced. It also decided to increase the number of teaching days in Universities and colleges to atleast 180 in an academic year. All these decisions will be immplemented with effect from the ensuing academic session.

The Committee further decided to accept the UGC regulations of 1985 to maintain the minimum standards of instructions for the grant of the first degree. It appointed a sub-committee to suggest appropriate measures to implement these regulations.

Allahabad Varsity to establish Institute of National Integration

The Executive Council of the University of Allahabad has approved the establishment of the Institute of National Integration as a research unit of the University. After due permission from the Indira Gandhi Foundation, the Institute will be named after Smt. Indira Gandhi.

Pending the appointment of research staff, the Vice-Chancellor himself will look after the activities of the Institute. To start with, it is proposed to bring out SANGAM, a Journal of National Integration, and to organize a seminar on a national integration theme.

News from Agril. Varsities

First banana hybrids from KAU

Clones belonging to different ploidy levels and genomic groups appear to be promising materials for the hybridization programme in banana. Studies on the compatibility of banana clones conducted in the Department of Pomology and Floriculture, College of Horticulture, in collaboration with Banana Research Station, Kannara, Trichur Kerala, showed that clones belonging to different genomic groups could be used as female and male parents, if they are compatible. One hybrid derived from the cross 'Agniswar' x 'Pisang lilin' has produced seedless fruits. This is the first time a hybrid seedless banana has been produced in Kerala. The work was initiated by Sri. J. L. Karmacharya, a P. G. Student from Nepal, under the guidance of Dr. M. Aravindakshan and in this work Dr. P. K. Valsalakumari and Sri P. K. Rajeevan were also associates.

Six male and 20 female parents were selected based on the preliminary studies and artificial pollination was carried out in 27 cross combinations. Out of these, eight crosses were compatible viz., 'Agniswar' x 'Pisang lilin', 'Palayankodan' x 'Pisang lilin', Palayankodan 'x 'Sikuzani', 'Harichal' x 'Pisang lilin', 'Mannan' x Paisng lilin, 'Vannan' x 'Pisang lilin,' Lacatan' x 'Pisang lilin' and 'Nendran' x 'Sikuzani'. The seedlings from the crosses 'Agniswar' x Pisang lilin', 'Mannan' x 'Pisang lilin' 'Harichal' x 'Pisang lilin', and 'Vannan' x 'Pisang lilin' are still being maintained by the Department and Banana Research Station, Kannara, Trichur.

One hybrid, H-7-4, derived from a cross between 'Agniswar' and 'Pisang lilin' was found to have certain promising features. In stature this was found to be dwarfer to the female parent 'Agniswar' by 28. 7cm. In spite of being a seedling plant, this had relatively shorter duration too. The weight of bunch was comparable with that of the better parent, Agniswar'. The finger size and quality were also superior. The fruits were seedless. It is of immense value to have seedless fruits even in the F_1 gereration in banana, especially in an inter-clonal combination.

The suckers derived from this hybrid are planted along with the parents for comparative studies. The other three hybrids are also being studied, results from which are expected.

The origin of cultivated bananas from Musa acuminata or as hybrids of this wild parent with wild Musa balbisiana is widely accepted. The present studies point out the possibility of some clones having originated from interclonal hybridization. Further studies on breeding in banana are being undertaken at the KAU.

National symposium on use of Radiation and Radioisotopes in agriculture

A 4-day national symposium on "Use of Radiations and Radio-isotopes in Agriculture, Biology and Animal Sciences with special emphasis on Post-Harvest Technology and Animal Vaccine Production" was organised by Indian Society for Nuclear Techniques in Agriculture and Biology, Nuclear Research Laboratory, New Delhi in collaboration with Indian Veterinary Research Institute, Izatnagar, Centre of Research for Development (CORD), University of Kashmir and Sher-e-Kashmir University of Agricultural Sciences and Technology, Srinagar. Prof. Shah Manzoor Alam, Vice-Chancellor of Kashmir University inaugurated the symposium and the Keynote address was delivered by Dr. P.N. Bhat, Director, IVRI, Izatnagar.

Scientists from various parts of the country participated in the symposium. Prof. Shah Manzoor Alam, Vice-Chancellor in his inaugural speech expressed that the interaction of the scientists belonging to different disciplines would prove useful. Dr. M.Y. Qadri, Director, CORD in his welcome address expressed hope that the participation of the scientists and their deliberations and the efforts put by the organising agencies would serve the purpose of the symposium.

Poultry training programme to be launched by Pantnagar Varsity

The Pantnagar University will launch village oriented massive programme of poultry training for the small and marginal farmers. To begin with a 10-day poultry training will be organised at the village headquarters of the three hill districts of Pauri, Chamoli and Pithoragarh. It is also envisaged that even if 20 farmers of a village of these districts get interested in the programme they may be brought at University expense for an exhaustive poultry training at Pantnagar.

Liquid nitrogen plant set up at Pantnagar Varsity

A Liquid Nitrogen Plant at a cost of Rs. 12 lacs had recently been set up in the Semen Biology Laboratory of the Pantnagar University to boost up livestock improvement programme by artificial insemination. The plant, which was inaugurated by the Vice-Chancellor, Sri Kripa Narain, will produce 150-160 litres of the liquid nitrogen daily and will be made available to the livestock farmers, P.C.D.F. and technicians of the State Government for artificial insemination.

'Swarna Prabha'— A new rice variety

The Regional Agricultural Research Station, Pattambi of Kerala Agricultural University has released a new rice variety—Swarna Prabha—a semitall, high yielding white kernelled short duration variety. Its duration is 100-105 days. This variety is resistant to blast and can be grown in uplands, palliyals and double crop wet lands.

News from UGC

INSAT-1B Programme of UGC

Between 10th and 22nd June, 1985, the following schedule of telecasts on higher education through INSAT-IB under the auspices of the University Grants Commission will be observed. The programme is of one hour duration every day from 12.45 p.m. to 1.45 p.m. (Repeated from 4 p.m. to 5 p.m.) and will be available on the TV network throughout the country. For the viewers in Delhi and surrounding areas, these programmes can be seen on the second channel.

10.6.85

"Optical Properties of Nemat"
"Mossbauer effect-II"
"Meditation about Discovery"
"New Solar System."

11.6.85

"Museum of live Nature-II"
"Feathered Life of Rajasthan"
"Marine Biology Off the coast of Brittanny."

12.6.85

"Electromagnetic Induction"
"The Third Beat of Sun"

13.6.85

"Gift of life."
"To See Again"
"Control and Regulation of Body Functions"
"Booker T. Whately"

14.6.85

"Lethal"
"Ancient Egypt"
"A Volcano is born"
"Larry King"

15.6.85

"Secondary Classroom"
"Indian Development Historic"
"The Badias"

16.6.85 (Sunday)

No telecast

17.6.85

"Transformers"
"Alternative Energy Resources"
"Vacuum-I"

18.6.85

"Food will There Be Enough"
"Flower"
"The Forgotten Heart"

19.6.85

"Auger Electronics-I"
"Thermal Physics"
"Semi Conductors."

20.6.85

"Mushrooms"
"More Wheat"
"Life its Unity and its Diversity."

21.6.85

"Yellow Stone Park-I"
"Peasant Life in India"
"Between Yesterdays and Tomorrow"
"The Great Whistle Off."

22.6.85

"Ralegaon Shinde"
"Women Power : Equality and Development."
"Cheshire Homes"
"Maccho Camacho."

Sports News

AIU honours its Volleyball Team

Combined Universities Volleyball Team did exceedingly well this year by convincingly winning the Federation Cup held at Tirunelveli from 6th to 14th April, 1985. By achieving this performance the team has emerged as the best team in the country. As a token of appreciation of its excellent performance, AIU awarded a Track Suit to each member of the team at a specially organised reception in honour of the team at NIS, Patiala on 14th May, 1985. Dr. S.S. Johl, Vice-Chancellor Punjabi University was the chief guest. Below is the photograph showing the chief guest giving away a Track Suit to Shri Sandeep Sharma, Vice-Captain of the team.

Dr. S.S. Johl, Vice-Chancellor, Punjabi University, presenting a Track Suit to Mr. Sandeep Sharma, Vice-Captain of the team

CALENDAR OF EVENTS

Proposed Dates of the Event	Title	Objective	Name of the Organising Department	Name of the Organising Secretary/Officer to be contacted
June 22-24, 1985	National Conference of Employers on how to establish links between Schools and Industry for the implementation of vocational education	For effective interaction and closer collaboration between schools and industry for the proper development of vocational education system	Birla Institute of Technology and Science, Pilani	Dr. V. V. Mandke Dean, Practice School Divn, BITS, Pilani
July 1-21, 1985	UGC sponsored short-term Institute on Polymer Science/Technology for teachers in Science and Engineering Colleges.	To impart training in theoretical and practical aspects of Polymer Science/Technology to teachers and research Scientists making use of the large facilities possessed by the Department.	Department of Polymer Science & Rubber Technology, University of Cochin, Cochin-22.	Dr. D. Joseph Francis Professor & Head Department of Polymer Science & Rubber Technology, University of Cochin, Cochin-22.
July 29-Aug 24, 1985	UGC Sponsored Summer Institute on "Computer Aided Numerical Analysis and Operations Research".	To familiarize the teachers on the programming languages and their applications; to encourage researchers to take-up real and sophisticated research problems which require computational techniques.	Department of Mathematics & Statistics, University of Cochin, Cochin-22.	Dr. T. Thrivikraman Department of Mathematics & Statistics, University of Cochin, Cochin-22.
August 5-Nov 29, 1985	Course on Remote Sensing and its applications to various-themes such as Water resources, Mineral resources, Terrain evaluation and Land use planning	To train middle level in-service engineers and scientists in the area of fundamentals of satellite remote sensing and its application	Centre of Studies in Resources Engineeing, I.I.T. Bombay.	Dr T.V. Pavate, Chief Project Engineer, Training Extension and Project Cell, I.I.T., Bombay.
September 9-12, 1985	UGC Sponsored All India Symposium on Recent Trends in Insect Endocrinology	—	Department of Zoology, Govt. College, Ajmer.	Shri J.N. Mathur, Director
September 26-28, 1985	UGC Sponsored National Seminar on "Behaviour Modification and Mental Health"	To investigate efficacy of suitable Behaviour Modification teachings in our Culture and Application of Behaviour Modification teachings in different areas of Mental Health.	Deptt. of Psychology, Dayalbagh Educational Institute, Agra.	Dr. (Miss.) S.P. Sinha, Reader & Head, Deptt. of Psychology.
November 28-29, 1985	**International Conference on New Technologies in Higher Education**	**To assess the possibilities of the now available new technologies in the background of the broad social and cultural context and the state and trends of Higher Education in India and other developing countries**	**Association of Indian Universities, IIT/Delhi, JNU, Jamia Millia and University of Delhi**	**Prof. Tapas Mazumdar (JNU), Prof. S. Shukla (Jamia Millia), Prof. L.R. Shah (JNU)**
December 12-14, 1985	Asia Pacific Symposium on Wind Engineering	Nature of wind and effect on structures and study of damage and its socio economic implications	Civil Engg. Department, University of Roorkee, Roorkee	Dr. S. K. Pathak, Organising Secretary
December 16-18, 1985	Indian Geotechnical Conference	To advance the state of knowledge about the geotechnical engineering and to give definite direction to the future research work	Earthquake Engg. Department, University of Roorkee, Roorkee	Dr. V. H. Joshi, Organising Secretary

ANNAMALAI UNIVERSITY

ANNAMALAINAGAR

NOTIFICATION

Applications in the prescribed form are invited for admission to the following courses for the academic year 1985-86 at the Annamalai University.

		Cost of application form including registration fees
1.	B.E., B.E. (Chem.) M.E., M.E. (Chem.)	Rs. 25.00
2.	B.Sc. (Agri.) and M.Sc. (Agri.)	Rs. 25.00
3.	M.A., M.Sc., M.Com., M.O.L., B.Ed., M.P. Ed., B.P Ed., M.Ed., M.Phil and Post Graduate Diploma Courses	Rs. 20.00
4.	Bachelor of Library and Information Science	Rs. 20.00
5.	Bachelor of Dental Surgery	Rs. 50.00
6.	B.Sc. (Nursing) for Women only	Rs. 30.00
7.	B. Pharmacy	Rs. 30.00
8.	D. Pharmacy	Rs. 20.00
9.	Sangitha Bushana, Diploma and Certificate Courses in Arts, Science & Engineering courses	Rs. 10.00
10.	One year Post B.Sc. Diploma in Computer Science and applications	Rs. 25.00

Application forms together with the prospectus can be had from the undersigned on written requisition either in person or by post from 1.6.85. Requisition should be accompanied by a demand draft or postal order (obtained not earlier than May 1985) drawn in favour of the Registrar, Annamalai University, payable at Annamalainagar for the different courses as mentioned above. The requisition for an application form by post should be accompanied by a self addressed envelope of size 30 cm. × 12.5 cm. stamped to the value of Rs. 1.30 with the name of the course for which the application form is required superscribed boldly on the envelope.

The applicatiom form is not transferable and the candidate should obtain it in his/her name only.

The last date for receipt of filled in applications by the University is 30.6.1985, for all the courses other than Post Graduate Courses and 15th day after the publication of under graduate degree results by sister Universities for Post Graduate courses.

The University will not be responsible for any postal delay.

AR. Lakshmanan
REGISTRAR

ESTD : 1980

Phones : Off : 1387
Res : 1386

KHAJA BANDA NAWAZ COLLEGE OF ENGINEERING

RAUZA BUZRUG, GULBARGA-585104
(affiliated to the University of Gulbarga)

No. KBNCE/ADM/1985-86/

ADMISSION NOTICE 85-86

Applications are invited for admission to the following:

(a) B.E. Degree (Four Years Course) :

1. CIVIL ENGINEERING
2. MECHANICAL ENGINEERING
3. ELECTRONICS AND COMMUNICATION ENGG.
4. INSTRUMENTATION ENGINEERING.

Minimum qualification for admission to the Engineering Course is a pass at the two-year pre-university examination or any equivalent examination approved by the Gulbarga University with a minimum average of 50% of the aggregate marks in Physics, Chemistry and Mathematics, and with English as one of the subjects. Diploma Holders of Karnataka, or diploma holder of other States recognized by Gulbarga University with a minimum of 50% of the total marks in the final exam in the said diploma course are also eligible.

Students desirous of seeking admission to the Engineering courses mentioned above should immediately contact the Secretary Khaja Education Society in person on or before **31.7.85**

Secretary
KHAJA EDUCATION SOCIETY
GULBARGA

INDIRA KALA SANGIT VISHWAVIDYALAYA

KHAIRAGARH-491881 (M.P.)

ADMISSION NOTICE

Admission shall be made upto the 7th August, 1985 to University Teaching Departments for prosecution of studies in Vocal Music, Instrumental Music (Sitar, Violin, Tabla Sarod, Sahanai) Musicology, Folk Music, Kathak Dance and Bharat Natyam from Certificate Course to Post graduate level courses. Bachelor and Post Graduate Painting Courses and M.A. History of Indian Art & Culture are also available. For foreign students condensed courses have been framed. Separate arrangements for Girls Hostel available. Research facilities for Ph.D/D. Mus. available with excellent library facility.

Application Form and Prospectus of General Information can be had on payment of Rs. 6 by IPO or M.O. Few Scholarships on merit cum means basis also available.

D. K. Ghosh
REGISTRAR

AIU Library

Established in 1965, the AIU Library has acquired over the years a valuable collection of books and documents on Higher Education. Among the topics prominently represented are Educational Sociology, Educational Planning, Educational Administration, Teaching & Teachers' Training, Examinations, Economics of Education and Country Studies, Developing fields of Adult Education, Continuing Education and Distance Education, and Educational Technology are also well stocked. The Library is particularly strong in its collection of reports whether they are on the setting up of different universities or on the state of Higher Education. Files of Annual Reports of different universities are also maintained. Readers are kept informed of the latest acquisitions through our column 'Additions to AIU Library'.

The Library also receives about a 100 periodical titles on Higher Education. All these are indexed regularly and a select list appears every month as 'Current Documentation in Education'.

Doctoral Degrees awarded during the preceding month are reported as 'Theses of the Month' while registrations made for such degrees are flashed as 'Research in Progress'. Bibliographies are also compiled and supplied on demand.

Research scholars and students of education are welcome to use these resources. The Library is situated at 17-B, Indraprastha Marg, New Delhi-110 002. It is open from 9.30 a.m. to 5.30 p.m. Monday through Friday. Access can also be had through inter library loan for which requisition must be made through your Librarian.

THESES OF THE MONTH

A list of Doctoral Theses Accepted by Indian Universities

HUMANITIES

Philosophy

1. Krishnayya, Matta Venkata. *Early buddhism and Jean Paul Sartre: A study in comparative philosophy*. Andhra U, Waltair.
2. Mishra, Deepak. *Bodh darshan mein parivartan kee samasya*. U Raj, Jaipur.
3. Niazi, Ataur Rehman. *Islam kee adarsh vyavastha ka pratyaya aur iski samsamyik prasangikta*. U Raj, Jaipur.
4. Shukla, Deena Nath. *Bhamati mat mein Bhram ka nirupan*. RDV, Jabalpur.

Fine Arts

1. Bandyopadhyay, Sima. *Banglar swadeshi ganer patabhumikay Rabindranather swadesh paryayer ganer mulyayan o vishleshan*. RBU, Calcutta.
2. Bhagwat, Nalini Gangaram. *Development of contemporary art in Western India*. MSU, Baroda.

Language & Literature

English

1. Balakothandaraman. *The sense of order in selected novels of Chinua Achebe, V.S. Naipaul and R.K. Narayan*. OU, Hyderabad.
2. Duuta, Sujitkumar Hriday Ranjan. *A comparative stylistic analysis of Raja Rao's and Chinua Achabe's english*. MSU, Baroda.
3. Jalali, Vasundhara. *Lionel Trilling as literary critic*. U Jammu.

Sanskrit

1. Bhaid, Shailaja Anant. *Panch Mahakavyateel nisargichitran: Ek taulnik adhyayan*. Nagpur U.
2. Ghatt, Surekha. *Sanskrit tatha prakrit sahitya mein Tapashcharan ka swaroop*. Bhopal U.
3. Gupta, Dev Raj. *A critical and comparative study of Dattakamamsa of Nanda Pandita and Dattakacandrika of Raghumani Vidyabhusana*. Pb U, Chandigarh.
4. Mehta, Vandana Dhirajlal. *Gadadhari: A commentary on Shriharsha's Naishadhiyacaritam by Gadadhara text* (Chapter 1 *to* 11) *with introduction*. MSU, Baroda.
5. Mukherji, Arati. *A critical analysis of verbal testimony* (*Sabda*) *as a means of cognition*. RBU, Calcutta.
6. Pandey, Lallen. *Dashkumar charitam: Ek sanskritik anusheelan*. U Raj, Jaipur.
7. Sharma, Krishanan. *Pandit Giridhar Sharma Navratnarachit sanskrit sahitya ka sameekshatmak ahdyayan*. U Raj, Jaipur.
8. Tripathi, Prabhu Dayal. *Sanskrit sahitya mein Urvashi-Purkha katha ka vikas*. HS Gour, Sagar.
9. Upadhya, Aparna. *Raghuvansh ke paryayon ka arth tatvik adhyayan*. RDV, Jabalpur.

Hindi

1. Joseph, N.K. *A comparative study of individualistic tendencies in hindi and malayalam novels*. U Ker, Trivandrum.
2. Panchariya, Chitra. *Anchalik upanyason ka sanskritrik adhyayan*. U Raj, Jaipur.
3. Ram Prakash. *Harivansh Rai Bachchan: Vyaktitva aur krititva*. Nagpur U.
4. Seshagiri Rao, Chebblu. *A comparative study of hindi and telugu prosodic systems*. Andhra U, Waltair.
5. Srivastava, Krishna. *Kathakar Shivani: Vyaktitva aur krititva*. Nagpur U.
6. Thakur, Devendranath *Premchand aur Ramanlal Desai ke upanyason mein samajik chetana*. OU, Hyderabad.

Urdu

1. Javed, Rehana. *Iqbal ka fikr-o-fun: Samaji aur mazhabi pase manzar mein*. Nagpur U.
2. Khan, Mehboob. *Dr. Muzaffar Hanfi: Hayat, shakhsiyat aur karname*. Nagpur U.
3. Khan, Rashid. *The urdu short story in the second half of the* 20*th century*, 1950 *to* 1980 *A.D*. Nagpur U.
4. Mohammad Nasir. *A study of Mahendranath*. Bhopal U.
5. Nabi Ahmad. *Dramatic elements in Iqbal's poetry*. U Bihar, Muzaffarpur.
6. Syed Yahya. *Urdu shairi mein mazhabi rujhanat*. Nagpur U.
7. Wadood, Safia. *Takhallus Bhopali: Hayat aur khidmat*. Bhopal U.
8. Wahajuddin, Alvi. *Urdu mein Khud Nawisht Swanch Nigari*. JMI, Jamianagar.

9. Zarina Rahman. *Hafeez Jalandhari ka fan.* U Bihar, Muzaffarpur.

Bengali

1. Gangopadhyay, Debanjan. *Rabindranather Chhotagalpa-o-charjan bideshi chhotagalpa lekhak, Poe, Manpassant, Turgenevand Chekov.* U Calcutta.

2. Ghosh, Prabhat Kumar. *Mahabharat samikshay karna charitra.* U Calcutta.

3. Ray Chaudhuri, Subhash Chandra. *Paschim Dinajpur jelar upabhasha.* RBU, Calcutta.

Manipuri

1. Nahakpam, Aruna Devi. *Twentieth century manipuri novel: An assessment.* Mani U, Imphal.

Orjya

1. Mahanta, Padmalochan. *Keonjhar Zillara loka sahitya: Eka adhyayan.* Sambalpur U.

Gujarati

1. Mehta, M.K. *Philosophy in the poetry of Narsinh, Miran, Akho and Dayaram.* Saur U, Rajkot.

Tamil

1. Ramdass, P. *Purananooru: Its form and significant features.* OU, Hyderabad.

Telugu

1. Brahmananda Sastry, Mulukutla. *Critical assessment of the poetic genius and the personality of Sri Thyagaraja Swamy.* Andhra U, Waltair.

2. *Muddappa, I. Pillilamappi Pina Veerabhadra kavi kavyanu sheelanamu, Srungara Sakuntalamu, Jaimini Bharatamu.* SKU, Anantapur.

3. Naga Rajya Lakshmi, Veluvolu. *Prabhandayugamu: Ashtadasavarnanalu* 1500-1600. Andhra U, Waltair.

4. Prabhakara Reddy, T. *Telugu viplava kavithvamlo pratheeka.* SKU, Anantapur.

Geography

1. Changole, Vasant Bapurao. *Geonomics of orange cultivation in Vidarbha Region.* Nagpur U.

History

1. Gupta, Babu Lal. *The organisation of trade in Rajasthan during eighteenth century.* U Raj, Jaipur.

2. Gupta, Madhubala. *Social contents of religious movement in medieval India during the fifteenth century.* U Raj, Jaipur.

3. Gurcharan Singh. *Babbar Akali movement: A historical survey.* Pb U, Chandigarh.

4. Patel, Kalhans Harilal. *A cultural study of rasa and garba of Gujarat, from the earliest times to the present day.* MSU, Baroda.

5. Pratap, Rita. *The miniatures of the Jaipur school of painting.* U Raj, Jaipur.

6. Sahi, Kalyani. *Growth of social and political consciousness in Bihar,* 1905-1918. U Bihar, Muzaffarpur.

7. Shukla, Gijubhai Dahyabhai. *Dandi, na samay-nu Bharat: Itihas ane sanskriti-ni-drishti-e ex abhyas.* SPU, Vallabh Vidyanagar.

8. Suryanarayana, Kolluru. *History of the minor Chalukya families in Medieval Andhra Desa.* Andhra U, Waltair.

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Fischer, Louis and others. *Teachers and the law.* New York, Longman (c1981) xi, 409p.

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Lovecy, Ian. *Automating library procedures: A survivor's handbook.* Delhi, D.K. Agencies, 1985.

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Meier, Gerald M. *Emerging from poverty: The economics that really matters.* New York, Oxford University Press, 1984. viii, 258p.

Merrill, M. David and Tennyson, Robert D. *Teaching concepts: An instructional design guide.* New Jersey, Educational Technology (c1977) xiii, 214p.

Paris, O.E.C.D. *In-service education and training of teachers: A condition for educational change.* Paris, Author, 1982. 88p.

Piaget, Jean. *Moral judgment of the child.* London, Routledge and Kegan Paul, (c1975) ix, 418p.

Pile, William. *Department of education and science.* London, Allen and Unwin, 1979. viii, 247p.

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Rogoff, Barbara and Lave, Jean, ed. *Everyday cognition: Its development in social context,* Cambridge, Harvard Univ. Press (c1984) 314p.

Roloff, Michael, E. *Interpersonal communication: The social exchange approach.* London, Sage (c1981) 151p.

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Schwartz, Melvin and O' Connor, John R. *Exploring a changing world.* New York. Globe (c1984) 626p.

Southgate, Vera. *Reading.* 3*V. V*2 *Teaching for learning.* London, Macmillan Education (c1984) vii, 118p.

Tomlinson, Sally. *Educational subnormality: A study in decision-making.* London, Routledge and Kegan Paul, 1981. xiii, 386p.

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DEPARTMENT OF CHEMISTRY

ALIGARH MUSLIM UNIVERSITY

ALIGARH-202 001

An UGC-sponsored national level workshop on the "USE OF MICRO-COMPUTERS IN TEACHING BIOCHEMISTRY AND CHEMISTRY" in collaboration with the Department of Computer Science shall be held between September 2nd to 28th, 1985.

The aim of the workshop is to offer training in :

(i) To familiarise teachers with the operation and programming of microcomputers in BASIC
(ii) To enable teachers to realise the applications and limitations of microcomputers in teaching Chemistry and Biochemistry.
(iii) To enable teachers to use microcomputers in an imaginative may to assist and improve the teaching of Chemistry and Biochemistry.
(iv) To inform teachers about the software available for teaching and how to write their own material.

A foreign expert will be available for guidance. 30 University Biochemistry and Chemistry teachers will be selected for this first workshop. Preference may be given to those who already have or likely to have microcomputer facilities. However earlier knowledge of computer is not essential. Applications are invited through the Heads of the Departments giving the following informations :

1. Name
2. Qualification including division, grade and year of passing.
3. Teaching experience, number of years and places where worked including subjects and classes taught.
4. Research conducted
5. Seminars/workshops attended in Science/technology Education (give full details).
6. Experience of Computers/microcomputers for teaching and learning purpose (give full details).

Participants shall be paid T.A. and D.A. according to UGC rules. They will be provided free board/lodge facilities in the University.

The application must reach to Professor A.M. Siddiqi, on the above address by June 30th, 1985. The selected candidates shall be informed by **July 31st, 1985**.

ANNA UNIVERSITY

MADRAS-600025

Advertisement No. 12042/L3/85 **Dated: 23-5-1985**

Applications are invited in the prescribed form for awarding.

TEACHING/RESEARCH/FELLOWSHIPS

QUALIFICATIONS : 1. I Class B.E./B.Tech. or
2. I Class M.E./M.Tech.

FELLOWSHIP : Rs. 1,200/- p.m. for Bachelor's Degree holders in Engineering/Technology subjects.
Rs. 1,300/- p.m. for Master's Degree holders in Engineering/Technology subjects.

AGE LIMIT : 24 years for holders of Bachelor's Degree in Engineering and Technology. 26 years for holders of Master's Degree in Engineering and Technology. Relaxable at the discretion of the University in case of persons with field experience.

DURATION : The Fellowship is tenable for three years.

AREA OF SPECIALISATION : Mechanical Engineering, Electrical and Electronics Engineering, Electronics & Communication Engineering, Automobile Engineering, Instrument Technology.

During the period of Fellowship the candidates will be given an opportunity to qualify for a higher degree.

Application form and other details can be had from this office on requisition accompanied by a Crossed Indian Postal Order for Rs. 5/- (Rupees Five only) dated not earlier than **1-6-1985**, in favour of the Registrar, Anna University, Madras-600025, together with a stamped self addressed envelope (Rs. 1.20) of size 22cm x 10cm. Requisition for application form and other details will be entertained upto 26-6-85.

Last date for receipt of completed application form is **29-6-1985.**

REGISTRAR

SCHOOL OF PLANNING AND ARCHITECTURE

(DEEMED TO BE A UNIVERSITY)

4-Block-B, Indraprastha Estate, NEW DELHI-110002

APPLICATIONS FOR ADMISSION TO 3-SEMESTER POST-GRADUATE PROGRAMMES AND PRE-LANDSCAPE ARCHITECTURE COURSE FOR THE SESSION 1985-86 ARE INVITED

ADMISSION QUALIFICATIONS

1. MASTER OF PLANNING

(with specialisation) in :

(i) URBAN AND REGIONAL PLANNING

(35 SEATS), Bachelor's Degree in Architecture/Civil Engineering of a recognised University or equivalent OR Master's Degree in Geography/Economics/Sociology of a recognised University or equivalent.

(ii) TRANSPORT PLANNING (15 SEATS)

Bachelor's Degree in Engineering/Architecture of a recognised University or equivalent OR Master's Degree in Mathematical Statistics/Economics with (Mathematics)/Mathematics (with Econometrics)/ Operation Research of a recognised University or equivalent.

(iii) HOUSING (15 SEATS)

Bachelor's Degree in Architecture/Civil Engineering/Building Engineering of a recognised University or equivalent OR Master's Degree in Economics/Sociology/ Municipal Engineering of a recognised University or equivalent.

2. MASTER OF ARCHITECTURE

(with specialisation) in :

(i) URBAN DESIGN (10 SEATS)

Bachelor's Degree in Architecture of a recognised University or equivalent.

(ii) ARCHITECTURAL CONSERVATION (5 SEATS)

Bachelor's Degree in Architecture of a recognised University or equivalent.

3. MASTER OF BUILDING ENGINEERING AND MANAGEMENT

(15 SEATS)

Bachelor's Degree in Civil Engineering/Architecture/Building Engineering of a recognised University or equivalent.

4. MASTER OF LANDSCAPE ARCHITECTURE (15 SEATS)

Bachelor's Degree in Landscape Architecture or Architecture of a recognised University or equivalent OR Master's Degree/equivalent Post-Graduate Diploma in Town and Country Planning of a recognised University/Institution or equivalent OR Certificate of completion of Pre-Landscape Architecture Course of the School of Planning and Architecture.

5. PRE-LANDSCAPE ARCHITECTURE

(1 YEAR, FULL-TIME, 4 SEATS)

Master's Degree of a recognised University in Agriculture/Horticulture/Forestry/Botany/Ecology/Geology/Geography of a recognised University or equivalent.

ELIGIBILITY

Candidates with 60% and more aggregate marks (55% in the case of SC and ST candidates) in the prescribed qualifications are eligible to apply for the above Master's and Pre-Landscape Architecture Programmes.

The sponsored candidates must possess the prescribed qualifications with at least 60% (55% in case of SC/ST candidates) of the aggregate marks or alternatively must have a minimum of 55% (50% in case of SC/ST candidates) of the aggregate marks with at least five years of professional experience counted from the date the candidate has, acquired the prescribed qualifications.

In-Service (non-sponsored) candidates with 55% (50% in case of SC/ST candidates) of aggregate marks or above but less than 60% (55% in case of SC/ST candidates) in the aggregate marks at the qualifying examination and with five years of professional experience counted from the date of acquiring the prescribed qualifications in the field are also eligible to apply, but they will have to appear at the Performance Test.

SELECTION PROCEDURE

On scrutiny of the applications, suitable candidates will be called to appear at the Performance Test and interview to be held on 8th and 9th July, 1985 at 10.00 am. at the School. Candidates will be selected for admission on the basis of their performance in the admission test and interview.

SCHOLARSHIPS

The School offers scholarships to all non-sponsored private candidates who have secured 60% or more marks (55% for SC/ST) at the qualifying examination. The value of scholarship is Rs 1000/- per month for Master's Degree Courses and Rs 600/- for Pre-Landscape Architecture Course.

RESERVED SEATS

Five percent of the sanctioned intake is reserved for SC/ST candidates.

GENERAL INFORMATION

Non-sponsored private candidates permitted to appear at the Performance Test will be paid one-way 2nd class railway fare for appearing at the Performance Test. During the days of the Performance Test they will be provided free lodging in the School Hostel, if accommodation is available.

Foreign Nationals are required to apply to the Government of India through their diplomatic channels.

IMPORTANT DATES

		Masters Programmes and Pre-Landscape Architecture Course
1.	Issue of Forms commences	7 6.1985
2.	Last date for issue of Application Forms against payment of Rs. 20/- in Cash/Indian Postal Order in favour of School of Planning and Architecture	
	(a) At School's Counter	29.6.1985
	(b) By Post	27.6.1985
3.	Last date for receipt of Application Forms	30.6.1985
4.	Notification of Admission List	22.7.1985

REGISTRAR

SPA/AE/3/85

CLASSIFIED ADVERTISEMENTS

BUNDELKHAND UNIVERSITY
JHANSI

Applications are invited for the following posts in the University Departments.

Departments	*Professor*	*Reader*	*Lecturer*
1. Master of Business Administration	1	1	1
2. Library Science	1	1	1
Scale of Pay :	Rs.1500-2500	Rs.1200-1900	Rs.700 1600

1. **Qualification for the post of Lecturer**

(a) Doctorate degree in the subject concerned or published work of high standard in that subject; and

(b) Consistently good academic record (i.e. to say the overall record of all assessments throughout the academic career of a candidate), with first class or High Second class (i.e. to say, with an aggregate of more than 54% marks) Master's degree in the subject concerned or equivalent degree of a foreign University in such subject.

2. **Reader**

(a) Good academic record with Doctorate Degree in the subject concerned or equivalent published work and active engagement in research of innovation in teaching methods or production of teaching materials; and

(b) Five years experience of teaching & research, including atleast three years as lecturer or in an equivalent position

Provided that the requirement contained in sub-clause (b) above, may be relaxed in the case of a candidate who in the opinion of the Selection Committee, has outstanding research work to his credit.

3. **Professor**

Eminent scholarship with published work of high quality and active engagement in research and ten years experience of teaching or research and experience of guiding research at Doctorate level. Outstanding scholarship with established reputation for significant contribution to knowledge

Five copies of applications together with five copies, each of attested testimonials, if any, separately for each post, giving particulars in the prescribed form which will be supplied on receipt of an Indian Postal Order of Rs. 15/- towards the cost of form should be sent to the Registrar so as to reach him not later than **1-7-85.**

Candidates who are employed elsewhere must submit their applications through their employers.

Bishambhar Nath
REGISTRAR

UTKAL UNIVERSITY
VANI VIHAR
BHUBANESWAR-751004

Advertisement No.
Estt. I/926-C/A 9685/85
Dated : 23-5-85

In supersession of this office Advertisement No. Estt. I/926-C/A-9169/85, dated 14-5-1985, applications, in seven copies, are invited in the prescribed form alongwith attested copies of Certificates and Marklists of all examinations passed for one post of **Reserve Bank Professor of Institutional Finance** for the P.G. Deptt. of Analytical and Applied Economics of the University on or before the **24th June, 1985** on the following conditions:

1. The University reserves the right to reject any or all applications without assigning any reason thereto.

2. No deputation allowance will be paid to the person holding lien in Govt. Services. Leave Salary and Pension contribution may be paid only for two years.
3. A panel of selected candidates will be maintained to be valid for one year from the date of selection; or till this post exists.
4. No T.A./D.A. will be paid to attend the interview and join the first appointment.
5. No applications will be entertained after the last date.

Scale of Pay

Professor : Rs. 1500-60-1800-100-2000-125/2-2500/- Higher initial salary can be given in case of highly suitable candidates.

Age of superannuation : 60 (sixty) years.

Essential Qualifications

An eminent scholar with published work of high quality, actively engaged in research. About ten years' experience of teaching and/or research. Experience of guiding research at Doctoral level.

OR

An outstanding scholar with established reputation who has made significant contribution to knowledge.

Desirable

Preference will be given to one who has specialisation in Instructional Finance, published some research work of high standard in the field and experience in guiding research work on the subject of **Institutional Finance.**

Prescribed application forms can be had from the Information Counter, Utkal University in person on payment of Rs. 7.60 (Rupees Seven and Paise Sixty) only including local sales tax or by post on receipt of a crossed Indian Postal Order for Rs. 10/- (Rupees ten) only payable to the Finance Officer, Utkal University, Vani Vihar, Bhubaneswar-4.

REGISTRAR

UNIVERSITY OF ROORKEE

ROORKEE

Advertisement No. Est. (A)/5-A-86(Advt.)

Dated : 17-5-1985.

Applications on prescribed form, obtainable from the Registrar either personally or by sending a self addressed envelope (9″×4″) affixed with 1.10 paise stamped are invited for the following posts. The prescribed qualifications may be relaxed for candidates with exceptional research/ndustrialiadministrative experience. Higher starting salary could be offered to candidates depending on their qualifications and experience. Applicants should generally not be above 55 years. Candidates in employment are required to send their applications through proper channel. Applications received late/ incomplete or without required remittance will not be entertained.

Last date for receipt of complete application on prescribed form along with application fee of Rs. 10/- (or a Bank Draft or Indian Postal Orders in favour of the Registrar, University of Roorkee) is **25-6-1985.**

1. **Deputy Registrar :** One (Regular) Scale Rs. 1000-1900.

Qualifications

Essential

(a) A good Master's degree in any field of Arts, Science or Commerce or a Bachelor's degree in Engineering.

(b) Not less than seven years administrative/academic experience.

(c) A good knowledge of Hindi and English.

Desirable

(a) A degree in law or Business Administration.

(b) Administrative experience in a University or other Educational Institutions in a responsible capacity.

2. **Assistant Registrar (Accounts)**—One (Temporary) Scale : Rs. 770-1800.

Qualifications

Essential

(a) A good Bachelor's degree in any field of Arts, Science, Commerce or Engineering.

(b) Not less than 5 years accounts experience.

(c) Good knowledge of Hindi & English.

Desirable

(a) A Master's degree or a degree in law or in Business Administration.

OR

Diploma of Institute of Chartered Accountants of India, or passed S.A.S. Examination.

(b) Experience in University Administration/Establishment/Development and Planning/Accounts.

Note :

Number of posts shown above may change at the time of Selection.

O.N. Chaturvedi
REGISTRAR

THE UNIVERSITY OF JODHPUR

(Establishment Section)

No. JDR : U : Estt. 3192

Advertisement No. 28/85

Dated : May 25, 1985.

Applications are invited on the prescribed form for the following posts so as to reach the office of the undersigned latest by **Ist July, 1985.** The application forms can be obtained from this office on payment of Rs. 5/- (five) only through I.P.O. payable to the Registrar, University of Jodhpur at Jodhpur along with a self-addressed envelope of 24 x 11 cms. size bearing postal stamps of Rs. 4.35. No fee shall be charged from SC/ST candidates.

Assistant Professor Home Science : Two (Temporary but likely to become permanent)

(Scale : Rs. 700-40-1100-50-1600)

Deputy Registrar : One (Temporary but likely to become permanent)

(Scale : Rs. 1500-50-1800-60-1200-75-2250)

Assistant Registrar : One (Temporary but likely to become permanent)

(Scale : Rs. 1000-30-1300-40-1500-50-1800-60-1860)

Demonstrator (Structural/Civil) : One each (Permanent)

(Scale : Rs. 820-20-900-25-1000-30-1300-40-1500-50-1550)

Note :

1. Details of qualifications will be made available to candidates along with application forms.
2. Dearness Allowance, House Rent Allowance, City Allowance and/or will be payable as per University Rules.
3. Those candidates who applied earlier for the post of Assistant Professor in Home Science in response to Advertisement No. 7/85, 104/84, 41/84 need not apply again.
4. The University reserves the right to increase or decrease the number of posts. The University also reserves the right not to fill the posts, if deemed necessary.
5. The University may call for interview only limited number of candidates. No T A and DA will be paid to candidates called for interview.
6. 16% and 12% posts are reserved for SC and ST candidates respectively.

P.S. Bhargava
REGISTRAR

SUKHADIA UNIVERSITY

UDAIPUR

Advertisement No. 1/85

Dated: May 30, 1985

Applications are invited in the prescribed from for filling up the following posts. Application form and full details about qualifications etc. can be obtained from the Registrar on payment of Rs. 5/- through Indian Postal Order in favour of the Comptroller, Sukhadia University, Udaipur. A self addressed envelope (27 cms x 12 cms.) duly stamped Rs 1.50 should invariably be sent alongwith the postal order.

The last date for receipt of application form the post mentioned in CATEGORY 'A' is 30th June, 1985 and for CATEGORY 'B' is 20th June, 1985.

CATEGORY 'A'

1. **Professor**
(a) Agronomy —1
(b) Plant Pathology —1
(c) Veterinary Parasitology —1
(d) Plant Breeding & Genetics —1
(e) Accounts & Statistics —1

2. **Associate Professor**
(a) Agronomy —5
(b) Agricultural Extension Education —7
(c) Bio-Chemistry —1
(d) Entomology —1
(e) Forestry —1
(f) Plant Pathology —1
(g) Plant Breeding & Genetics —1
(h) Soil & Water Conservation —1
(i) Home Management —1
(j) Electrical Engineering —1
(k) Mining Engineering —1
(l) Soil & Water Conservation Engg. —1
(m) Animal Breeding —1
(n) Veterinary Parasitology —1
(o) History —1
(p) Drawing & Painting —1

Assistant Professor
(a) Entomology —1
(b) Agricultural Chemistry & Soil Sc. —1
(c) Plant Pathology —1
(d) Veterinary Anatomy —2
(e) Veterinary Microbiology —1
(f) Clothing & Textile —1
(g) Home Management —1
(h) Home Science Extension Education —1
(i) Electrical Engineering —1
(j) Electrical Engineering (Electronics) —1
(k) Political Science —1

4. Supdt. Physical Education —2
(One post for female candidate)
5. Assistant Registrar —2
6. Assistant Engineer (Civil) —4
7. Food Technologist —1
8. **Instructor**
(a) Veterinary Medicine —1
(b) Veterinary Gynaecology —1

CATEGORY 'B' (Adhoc basis)

1. **Assistant Professor**
(a) Philosophy —1
(b) Political Science —1
(c) Jainology & Prakrat —1
(d) Economics —1
(e) Geography —1

2. **Research Associate/ Teaching Associate**
(a) Agronomy —25
(b) Plant Breeding & Genetics —3
(c) Plant Pathology —3
(d) Ag. Chemistry & Soil Science —1
(e) Agricultural Economics —4
(f) Entomology —8
(g) Agricultural Statistics —1
(h) Horticulture —2
(i) Nematology —1
(j) Bio-Chemistry —3
(k) Extension Education —1
(l) Veterinary Parasitology —1
(m) Animal Breeding —1
(n) Veterinary Nutrition —1
(o) Veterinary Microbiology —1
(p) Veterinary Physiology —1
(q) Veterinary Gynaecology —1
(r) Animal Production —1
(s) Commerce (Banking) —1

Pay Scale for Category 'A'

1. Professor Rs. 1500-60-1800-100-2000-125/2-2500.
2. Associate Professor Rs. 1200-50-1300-60-1900.
3. Assistant Professor Rs. 700-40-1100-50-1600.
4. Supdt. Physical Education Rs. 700-40-1100-50-1300.
5. Assistant Registrar/Food Technologist/Asstt. Engineer (Civil) Rs. 1000-30-1300-40-1500-50-1800-60-1860.
6. Instructor Rs. 860-20-900-25-1000-30-1300-40-1500-50-1750.

Pay Scale for Category 'B' (Adhoc basis)

1. Assistant Professor Rs. 700 fixed per month and D.A. as per U.G.C. pay scale.

2. Research Associate/Teaching Associate Rs. 1100 fixed per month (if persons are posted in rural/difficult areas they will be paid special allowance of Rs. 150 per month.

Benefits of D.A., House Rent Allowance, Provident Fund and Leave etc. would according to University rules.

Qualifications

Generally as prescribed by the University Grants Commission/ University. Details of qualifications will be supplied alongwith application forms.

General Note

1. Number of posts may be increased or decreased.

2. In case of Professor, Veterinary Parasitology, Plant Breeding and Genetics, Accounts and Statistics, Associate Professor, Agricultural Extension, Forestry, Home Management, Plant Breeding and Genetics, Mining Engineering, Electrical Engineering, History, Drawing and Painting, Veterinary Parasitology, Soil and Water Conservation, Soil and Water Conservation Engineering, Assistant Professor, Clothing and Textile, Ag. Chemistry and Soil Science, Plant Pathology, Political Science, Electrical Engineering (Electronics), Home Science Extension Education, Home Management, Assistant Engineer (Civil) and Research Associate, the candidate who have already applied in response to our previous Advertisement No. 1/83 dated 3.1.83, 2/83 dated 14.2.83, 4/83 dated 23.5.83, 7/83 dated 23.12.83, 2/84 dated 6.4.84, 6/84 dated 30.7.84, 7/84 dated 17.9.84 and 8/84 dated 5.12.84, need not to apply again.

3. The qualifications may be relaxed in case response is poor.

4. The applications received after the expiry of the last date may also be considered at the discretion of the Vice-Chancellor.

5. 16% posts would be reserved for Scheduled Castes and 12% for Scheduled Tribes, subject to general suitability.

6. A higher start in the grade may be considered for exceptionally qualified candidates.

7. Application forms can also be obtained from the following Officers :

1. The Director Research (Agriculture) Agricultural Experiment Station, Durgapura, Jaipur (Raj.).
2. The Dean, S.K.N. College of Agriculture, Jobner (Raj.).
3. The Dean, College of Veterinary and Animal Science, Bikaner. (Rajasthan).

8. The University reserves the right not to fill up any of the posts advertised.

G.S. Sharma
REGISTRAR

THE GANDHIGRAM RURAL INSTITUTE

(Deemed University)

Applications are invited for the following posts on or before **15-6-1985.**

1. **Registrar :** One Post.

Scale of Pay : Rs. 1500-60-1800-100-2000-125/2-2500.

Qualification

1. First or Second class Master's Degree of a Recognised University.
2. Administration experience of atleast 5 years in a University or in a Teaching or Research Institute or in any Department of the Central or State Govt.

Desirable

Atleast 3 years of teaching experience in an University or in an affiliated college.

2. **Deputy Registrar :** One Post.

Scale of Pay : Rs. 1100-50-1300-60-1600.

Qualification

1. A graduate of a recognised University.
2. Atleast 10 years of Administrative/Academic experiences.

3. **Finance Officer :** One Post..

Scale of Pay : Rs. 1100-50-1300-60-1600.

Qualification

1. A Bachelor Degree of a recognised University.
2. Chartered Accountant.
3. Five years experience in Financial Administration and Accounting procedures in any reputed Institution or Firm.

4. **Estate Officer :** One Post.

Scale of Pay: Rs. 675-35-885-45-1200 with the admissible allowances as per the rates of Tamil Nadu Government.

Qualifications

1. B.E., (Civil Engineering) with atleast three years of experience in Building construction and similar other capacities.

OR

Diploma holder in Civil Engineering with Five Years of experience in Building construction.

2. Retired persons with a Degree or Diploma in Civil Engg. with experience in Building construction may also apply.

5. **Lecturer in Sociology :** One Post.

6. **Lecturer in Economics :** One Post.

Scale of Pay for 5 and 6 : Rs. 700-40-1100-50-1300-EB-50-1600.

Qualification for 5 & 6

A. Ph.D. Degree or published work of an equally high standard in the subject concerned and consistently good academic record with I or II class (B+) Master's Degree or an equivalent degree of a foreign University.

B. Teaching experience in any University or College for atleast five years.

7. **Reader in Extension Education :** One Post.

8. **Reader in Research :** One Post.

9. **Reader in Extension :** One Post

Scale of Pay for 7 to 9 : Rs. 1200-50-1300-60-1900.

Qualifications for 7 to 9

A. Ph.D. Degree in the concerned field of specialisation.

B. Teaching experience in any University or College for atleast five years.

C. Experience in Research in the concerned field of specialisation as evidenced by published papers in Scientific Journals and Books.

10. **Fieldman :** One Post.

Scale of Pay : Rs. 350-10-420-15-600.

Qualification

Diploma in Agriculture/Two year Certificate Course in Agriculture.

11. **Skilled Technician :** One Post.

Scale of Pay : Rs. 250-5-330-10-400

Qualification

Skill in dairy cattle and goat maintenance.

Experience in Gandhian Constructive Work and/or Diploma in Gandhian Thought is desirable for all the posts.

Candidates may apply giving their full Bio-data in detail along with true copies of certificates enclosing Postal Order for Rs. 10/- (Rupees Ten only) payable to the Registrar, Gandhigram Rural Institute, Gandhigram-624302 (not refundable) Madurai District payable at Gandhigram Post Office.

Last date for receipt of application is **15-6-1985.**

REGISTRAR

UNIVERSITY OF ROORKEE

ROORKEE

Advertisement No. 22/85 (Advt.)

Dated : May 22, 1985

The University of Roorkee had advertised the following academic posts vide its advertisement No. Estt(A)/333/84-A-86(Advt.) dated 17-12-1984, No. Estt.(A)/2/85-A-86 (Advt.) dated 2-2-1985 and No. Estt (A)/26/2/85-A-86 (Advt.) dated 26-2-1985.

Department	Posts
Institute of Paper Technology :	Professor 1, Lecturer 2.
Mechanical & Industrial Engg. :	Professor 2, Reader 5.
Civil Engineering:	Professor 3, Reader 2, Lecturer 2.
Electrical Engineering:	Professor 2, Reader 3, Lecturer 7.
Electronics & Comm. Engineering :	Professor 1, Reader 3.
University Service & Instrumentation Centre:	Reader 1.
Water Resources Development Training Centre:	Professor 1.
Chemistry:	Professor 3, Reader 3, Lecturer 2.
Mathematics :	Professor 1, Reader 1.
Bio-Sciences :	Professor 1, Reader 3, Lecturer 1.
Earth Sciences:	Professor 2, Reader 3, Lecturer 5.
Physics :	Professor 2, Reader 3.
Humanities & Social Sciences:	Professor 2, Lecturer 1.

It is hereby notified that the qualifications for the above posts have been modified and are now the same as those given in University Grants Commission's letter No. F.1-93/74(CP) dated February 19, 1985. Candidates who have already applied in response to the above advertisements need not apply again but they are required to intimate to this office, the additional qualifications acquired alongwith change in address, if any. Other candidates who are interested in the above posts, may obtain the prescribed application form and a copy of the qualifications from the Registrar, University of Roorkee-247667 personally or by sending a self addressed envelope (9″ × 4″) with Rs. 1.10 paise stamp by **30th June, 1985**. Last date for receipt of completed application forms is **July 20, 1985.**

O.N. Chaturvedi
REGISTRAR

UNIVERSITY NEWS, JUNE 8, 1985 Regd. No. R. N. 7180/63 Post Regd. D(C) 1086

NEW ARRIVALS FEBRUARY 1985

GOVERNMENT OF INDIA PUBLICATIONS

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9	Transactions of the Public Sector 1960-61 — 1979-80 (Print 1984). PDOX.65. (Diglot)	66.00
10.	Account Code — Volume III Departmental Accounts (incorporating correction Slip Nos. 1 to 167). (First edition Third Reprint). (Print 1984). PCGA 32 (Dig). (Diglot).	59.00
11.	देवनागरी टाइपराइटिंग प्रशिक्षक (Print 1984). PDOL.32(N)	4.10
12.	Rashtriya Panchang Saka 1907 (1985-86 A.D.). Eng. Version (Print 1984). PDGM 70.1907 (Eng.) (N)	3.00
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15.	Indian Live Stock Census 1977. Vol. I. Summary Tables. (Print 1984). PDES 34.77.1 (Diglot).	141.50
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FD '52

University News

JUNE 16, 1985

Re. 1.00

Giani Zail Singh, President of India, delivered the convocation address at the Panjab University, Chandigarh. He is seen above (from L to R) with Prof. R.P. Bambah, Vice-Chancellor, Shri R. Venkataraman, Vice-President of India & Chancellor of the University and Mr. Justice M. Hidayatullah, former Vice-President of India.

CLASSIFIED ADVERTISEMENTS

INDIAN INSTITUTE OF SCIENCE
BANGALORE-560012

Advertisement No. R(IA)308-20/85
Dated 3rd June 1985

Applications in the prescribed form are invited for the post of SENIOR SCIENTIFIC OFFICER for Instrumentation in the Department of Biochemistry at the Institute under the COSIST Programme in the grade Rs. 1100-50-1300-60-1600, plus allowances at Central Government rates prevailing at the Institute from time to time. Emolument at the minimum of the scale total to Rs. 2845.35 per month (including House Rent Allowance).

Qualifications and Experience

Essential

Master's degree in Electrical Engineering or Electronics Engineering with at least five years experience in servicing and operation of scientific research equipment such as spectrophotometers, centrifuges, scintillation counters and spectropolarimeter.

OR

Master's degree in Science with at least six years experience in the servicing and operation of scientific research equipment such as spectrophotometer, centrifuges, scintillation counters and spectropolarimeter.

Desirable

Experience in designing and fabrication of electrical and electronic equipment used in Biochemical research.

Job Description

The selected candidate is expected to carry out work connected with the installation and operation of sophisticated biochemical research equipment in the department. Maintenance and servicing of the equipment are also to be undertaken. Assist in the special requirements of the research programmes for designing and fabrication of electrical and electronic equipment.

Relaxation

The stipulation regarding the relevant experience is relaxable at the discretion of the competent authority in the case of candidates possessing exceptionally good record and outstanding capabilities.

Tenure of Appointment

Normally, all new appointments at the Institute are made on contract for periods of five years including an initial probationary period of one year If at the end of the first contract, the work and progress of the candidate is found satisfactory, the Institute may consider offering a continuing pointment till the age of superannuation i.e. 60 years.

General

Application forms (six copies) can be obtained from the Registrar, Indian Institute of Science, Bangalore-560012, on requisition. Each request for application forms should be accompanied by a crossed Indian Postal Order for Rs. 5/- (non-refundable) made payable to the Registrar, together with a self-addressed stamped (Rs. 3.30) envelope of the size of 28 cms. × 18 cms. The payment of application fee is exempted in the case of candidates belonging to Scheduled Castes/Scheduled Tribes on production of certificate from a competent authority.

The last dates are:

(a) For issue of application forms : **29-6-1985.**

(b) For receipt of completed application forms : **15-7-1985.**

Applicants in the service of Government, quasi-Government, Government-aided or similar institutions should apply through proper channel. Otherwise, their applications will not be considered.

It shall be open to the Selection Committee for a higher post to recommend a person for a lower post if a suitable candidate for the higher post is not available.

Due consideration will be given to candidates who are physically handicapped provided they are academically/scientifically sound and well qualified and generally comparable to others.

Higher starting salary may be considered to candidates with exceptional merit.

Kindly quote the advertisement No. and date in all correspondence. Candidates should ensure that applications are complete in all respects.

Detailed terms and conditions of appointment will be supplied along with the application forms.

REGISTRAR

BHOPAL UNIVERSITY
BHOPAL

No 2230 Estt/BU/85
Dated 20th May 85

CORRIGENDUM

Subject : Advertisement for the post of Co-ordinator for Coaching Classes for Competitive Examinations for Minority Communities.

In this University Advertisement No. 2/85 dated 2.5.85, released vide this Office No. 1854/BU/Estt/85 dated 2.5.85, the age limit for the post of "Co-ordinator" mentioned under the heading "Qualifications", should be read as "NOT MORE THAN 40 YEARS".

M.N. Bhauraskar
REGISTRAR

ASSOCIATION OF INDIAN UNIVERSITIES
16 Kotla Marg, New Delhi-110002

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UNIVERSITY NEWS

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Editor :

M. S. RAMAMURTHY

Rebuilding Our Universities

R. P. Misra*

Barring a few exceptions, our universities are on the verge of collapse. The problems they face have been discussed many a time and at various levels. The reasons put forward include unrestricted admission of students, apathetic attitude of teachers towards their profession, outdated examination system, lack of well-equipped libraries and laboratories, rapid increase in the number of universities and colleges often at the cost of quality education, ambivalence toward medium of instruction, antiquated administrative and management style, and inadequate funding.

Many of these problems are, however, symptoms rather than cause of disintegration. The real cause lies in our inability, as an academic community, to respond appropriately and adequately to the new and emerging challenges, arising in the wake of changing perceptions of what a university stands for.

The primary objective of a university is to keep the society intellectually alive by expanding the frontiers of knowledge and training young men and women for fulfilling the needs of society. Vitality, courage, sensitivity, intelligence and academic excellence are the qualities which a university educated person is expected to possess. A teaching community, devoid of some of these qualities, and a student population, seeking degrees rather than knowledge, cannot meet this objective.

Our universities have been pressurized to dilute their norms, goals and objectives, by admitting those who cannot be accommodated elsewhere—and all this in the name of equality and social relevance. True, the qualities which one must possess to receive university education are not confined to any particular community or group; they are found universally. And it is the task of the university to attract talent from everywhere, irrespective of caste, community, religion, etc. Universities may even go a step further and arrange for special remedial programmes to help students, drawn from backward groups and communities, to catch-up with the rest. But nothing beyond this. Universities should not be called upon to solve problems beyond their purview nor should they become 'waiting rooms' for unemployed youths.

Now that a new education policy is on the anvil, it is my fervent hope that the issue will not be approached from a wrong end once again. While symptoms are good indicators of the disease, they do not necessarily manifest the real cause. We must reassert the primary objective of a university as outlined above and lay emphasis on

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**Vice-Chancellor, University of Allahabad, Allahabad.*

academic excellence once again. Other things which follow from this assertion are :

(1) All universities in India (one can start with, let us say, 20 oldest universities) should be declared as institutions of national importance and they should be so transformed structurally and academically that they function as national institutions of higher learning. This means that the faculty and students of these universities should be drawn from all over the country. The Union Government, through its various organs like the UGC, should create appropriate conditions (including faculty housing, hostels, scholarships, etc.) to facilitate this change over.

Universities may continue to be funded by the State Governments, but additional funds required to 'nationalize' them should come from the Central Government.

(2) Each university in India should have its thrust area. Universities should not try to do everything. Given limited resources and manpower, each should take those disciplines which can be developed best given the past investment, regional needs and human potentials. Emphasis should lay on science and technology and arts and aesthetics, for these are the fields most neglected by our universities.

(3) The onslaught on university autonomy, which has now become a common feature in India, must stop. A national consensus against this must emerge soon. At the same time, universities must exhibit a sense of accountability towards the society, and more importantly towards the very objective for which they stand.

(4) Admission to students to universities should be limited and only those who have qualified themselves creditably in an entrance test should find a place in them. Those who fail to get admission, should be diverted to vocational courses, correspondence courses and other programmes aimed at training in skills of various types.

(5) Applicants for lecturers' post in Indian universities should appear in a written test before being interviewed for selection. It will be preferable to administer an all-India test like that for Central Services for this purpose. The selected persons should undergo an intensive training in the methods of teaching and research and also in recent advances in the chosen discipline. The desirability of a National Academy of Teachers Training, needs no emphasis.

(6) Accountability of the teachers for the work they do, is to be emphasized. Self-assessment reports should be given by each teacher annually. The existing time-bound scheme to promote teachers must stop. Running grade may be given, but not running designation without academic excellence.

(7) Steps to reform the examination system be taken. The principle of internal evaluation must be accepted. The teacher should have greater freedom in framing the curricula than he has at present.

(8) The university management must be revamped on completely different lines. There is a need of a top governing body consisting of management specialists, educationalists, scientists, industrialists and men in public life. This body should be so constituted that it does not represent contradictory sectional interests. Finance, personnel management and sports development, to mention a few, would be the exclusive responsibility of this functional Board of Governors, while academic matters would be managed by the academic council, faculties and deans.

(9) The fee-structure of the universities must undergo a sea change. It should be made more equitable. There is no reason why fees on unit cost basis not be charged from those who can afford to pay. In order to help those who cannot pay, adequate number of scholarships should be instituted.

(10) Universities must develop their research and R & D wings to get closely associated with the socio-economic activities going on in their environs. This will encourage industry and business to contribute liberally to the development of the universities.

(11) Postgraduate studies should be confined to the residential wings of Indian universities. Only such colleges as qualify for autonomous status should have postgraduate teaching and research. Affiliated colleges should have a separate authority like Board of Colleges, and the universities should be relieved of the burden of managing their admissions and examinations.

(12) Open universities and colleges should be well equipped to provide 'distance education,' and vocationalization of education should begin at 8+ stage so that by the time a student reaches 10+2 stage, he is already trained in a skill of his choice.

(13) Funds, provided by the Central and State Governments, should be assured for at least five years at a time to enable the universities to prepare medium-term plans. The UGC should also function as a watch-dog and take stern steps against erring universities and colleges.

(14) Finally, the degree requirements for many lower—and middle—level jobs should be done away with.

In the ultimate analysis, the future of higher education in India lies in the quality and attitude of the teaching community. Nothing will work, if the teachers fail to respond to the call of their profession and reassert their role as builders of a New Educational Order in India. Are we teachers, joining to rise equal to the occasion? □

[Courtesy: Allahabad University Newsletter, May 1985]

Indore Discussion Group on New National Policy of Education

A group of citizens of Indore comprising representatives from social workers, political workers, industrial management experts, College Principals, College and University teachers, members of Press, Parents etc. met recently and prepared a note containing their views and suggestions on "New National Policy of Education".

Given below are extracts from the note.

"..We believe that ever since our independence, due attention has not been paid to provide a broad and strong base for primary education, for building a suitable edifice for secondary education, vocational education and higher education required for the developmental needs of the country. This neglect has accentuated our failure to eradicate illiteracy along with various other problems... "the New Education Policy should ensure the creation of realistic *objectives* be to obtained through relevant contents and dynamic methods of education...

"We believe that in the New Policy of Education, due emphasis will be laid on (i) improving and expanding primary education, (ii) stopping the expansion of unproductive college education, (iii) vocationalisation of education at all levels, (iv) creating suitable structure of administering Rural Education, (v) qualitative improvement in the Preparation of Teachers, and (vi) creating political and administrative will required for quick and efficient implementation of the new policy.

Towards strengthening and expanding primary education in rural areas :

The conditions and the environment of the rural students are different from those of the urban areas, and therefore, a new treatment and approach for rural education has to be designed, so as to focus upon the real problems of rural education.

We recommend:

(a) Within the Ministry of Education, a Sub-Ministry of Rural Education be formed...

(b) Creating research centres for rural education in each State : "..These research centres should focus upon the problems of designing need-based curriculum, drop out, stagnation, preparation of suitable support material, preparation of rural teachers, mechanism of motivating society in school affairs, creating suitable links and transfers within and between the various levels of the total education structures, and designing suitable work-experience activities.

(c) Providing, at least, minimum physical facilities of building, furniture, equipments, teaching aids, teacher-quarters, play fields, playing aids and drinking water for rural schools.

(d) Special Preparation of Rural Teachers by having careful admissions, specially designed curricular activities, and providing Rural Teachers with facilities like ensured and compulsory employment in rural areas, promise of better residential and medical facilities, etc.

Strengthening Primary Education in General—all areas and total society :

(a) Complete enrolment of all school-going children with special attention to girls, urban poor, slum dwellers, SC/ST, Backward Classes and other weaker groups.

(b) Introducing Mother Tongue as medium of instruction without exception, in all the primary schools of the country keeping in mind that the teachers are capable of communicating in local dialects, as well.

(c) Expansion of pre-primary education.

(d) Introducing work-experience for developing favourable attitudes and skills for labour.

(e) Reducing the academic work load of text-books for primary school children.

Vocationalising and Vocationalisation of Education:

(a) Work-experience/SUPW be introduced at all levels of school education : More funds, equipments, suitable teachers and instructions be provided for the activities of work-experience.

The impediments of indifference of parents and pupils for work-experience be met in different ways. The higher secondary certificate should reflect four areas : (i) Academic Performance; (ii) SUPW/Work experience; (iii) Values within the constitutional framework; and (iv) Health. Secondly, the admission to professional courses and higher education should take into consideration all aspects of school education including work experience. Likewise, the financial and employment incentives should also help to reinforce the work-experience activities.

(b) The quantity and quality of work-experience should gradually improve from primary to secondary education, and should be designed according to the needs and facilities available.

(c) During the vocationalisation at + 2 stage, more emphasis should be given to the development of refined skills leading to productivity. The schools in +2 vocational streams should open workshops while the related "factories and other work units" should open "teaching shops" in their work premises...

Preparation of Teachers

The professional preparation of teachers at Pre-Primary, Primary, Secondary, College and University levels should be introduced and improved upon. Institutes of Education aiming at the preparation of teachers should design integrated four years residential courses on the lines of preparation of Engineers and Doctors. A University of Education on the lines of Technical Universities and Agricultural Universities be established as an experimental venture.

Higher Education

(a) Doors of Higher Education should be open only to meritorious students on a selective basis. Manpower planning and social conditions should determine admission to Higher Education. *Open door policy in admissions to all higher education institutions be stopped forthwith.*

(b) **Talented Students** : Special identification of talented students from weaker sections of society, and the provision of nurturing environment through preparatory and residential institutions are primary requirements to meet the egalitarian theme of our nation...

(c) Introduction of one year full time Socially Useful Productive Work for the regular college students be introduced...

(d) Government should ensure that the beneficiaries of all types of aided higher education, return the incurred expenditure in cash or kind. This would simultaneously solve many other problems, such as, finance, over-crowding, brain drain, and unmotivated learners. The Government ought to take this hard decision at its earliest.

(e) Depoliticalisation of institutions of higher education.

(f) Utilisation of the available resources of buildings, libraries, working days, working hours per day, be examined and monitored more carefully.

(g) Delinking of degrees from the jobs be accepted at its earliest.

(h) An Open University and correspondence education should start replacing and/or strengthening Arts & Commerce colleges.

Implementation of National Policy

(a) We strongly feel that political WILL must create conditions of quick and effective implementation of New National Policy of Education...

(b) The necessary resources of money, men and materials be provided through Central Government, State Governments, Private Bodies and the Society at large.

(c) If needed, legal measures supporting effective implementation could be adopted. The constitutional provision "Education in Concurrent List" be fully exploited to streamline the planning, implementation and constant monitoring the affairs of Education.

Minimum Norms

Minimum Norms for all types and levels of educational institutions be planned and adhered to, for opening and strengthening institutions. The concept of Minimum Norms about physical facilities alone, has to be widened and replaced by many sets of norms meant for different components and functions involved in the complicated process of running educational institutions. These norms should characterise the desirable aspects of : (a) physical conditions of institutions; (b) nature and qualification of teachers and other members; (c) support climate from parents and management; (d) administrative machinery and utilisation of resources; and (e) diligence and seriousness of learners..." □

CENTRE OF ADVANCED STUDY
IN PSYCHOLOGY

UTKAL UNIVERSITY

VANI VIHAR, BHUBANESWAR

Applications in prescribed forms, to be supplied on request, are invited from candidates qualifying in the National Test conducted by U.G.C., for the award of two JUNIOR RESEARCH FELLOWSHIPS. JRFs have to complete M.Phil before they register for Ph.D. Completed forms, duly filled in, must reach the under-signed by **10.7.1985.**

S. K. Misra
HEAD OF THE DEPARTMENT

UGC Study Centres: Nature and Performance

A Case Study of Andhra University Centres

P. Bhaskara Rao*

The University Grants Commission has initiated a number of student welfare programmes, especially in regard to the needy and the poor students on the one hand and the meritorious on the other. The provision of student amenities in the Universities and colleges is not merely a welfare activity but constitutes an integral part of educational development. The scheme of U.G.C. Study Centres was included for the first time under the "student amenities" head in the U.G.C. Report during the year 1972-73. The U.G.C. Study Centres were first introduced during the Fourth Five Year Plan.

There has been a steady growth in the number of colleges and universities during the last three decades in different parts of the country. During 1975-76 there were 96 colleges affiliated to Andhra University. The U.G.C. was, in principle, sanctioning 5 to 10 study centres depending upon the size of the University and the number of colleges affiliated to it. Basing on these guidelines, eight study centres were sanctioned to Andhra University.

These eight study centres were opened by the Andhra University in two phases i.e. three centres during the year 1972-73 at (1) Vijayawada; (2) Vizianagaram; and (3) Guntur, and the remaining five were opened during the year 1977-78 at (1) Rajahmundry; (2) Kakinada; (3) Eluru; (4) Visakhapatnam; and (5) Srikakulam.

The Importance of U.G.C. Study Centres

The establishment of U.G.C. Study Centres has brought a new development of the library system at the college level. Within the University, the network of the Library starts from the University Main/Central Library to the university branch libraries and the departmental libraries. In addition to these, the U.G.C. sanctioned study centres were also established within the jurisdiction of the University.

In Andhra University, the study centres are acting as a main link in the chain and the network of academic library system in the University. The study centres attract and invite all classes of student community, irrespective of their course, class and college, including professional and undergraduate level students. The study centres are linking up all affiliated colleges—graduate, undergraduate and professional colleges, which are situated in and around the local area of the study centres. The study centres are playing a very important role in serving a large number of users, by working outside the normal hours of the college.

Scope

This prompted the author to take up this project of "surveying the existing conditions, nature and performance of U.G.C. study centres, affiliated to Andhra University". The emphasis is on fact finding. The main stress is on the effective working of the centres, and to assess the users' satisfaction.

Nature of the Study

(i) The present survey aims to evaluate the existing conditions, and to find out the extent to which the financial assistance is required during the VI plan period, to create better facilities and to develop good stack.

(ii) To investigate and suggest further ways of financial resources for the healthy development and smooth running of the study centres, in case of non-provision for U.G.C. grants in the VI Five Year Plan period.

(iii) To assess the prospects of the study centres, in case the State Government and Andhra University provide further grants for its development.

Methodology Used

For the present study, the questionnaire method was used. The questionnaire was posted to the eight study centres, and all the eight study centres responded, the response being 100%. Besides the questionnaire, personal interviews were conducted with the librarians of three study centres; viz. (1) Mrs. A.V.N. College in Visakhapatnam; (2) Govt. College (Men), Srikakulam; and SRR & CVR Govt. College, Vijayawada. However, it is gratifying to note that each and every point in the questionnaire was answered by the librarians of all the eight study centres.

The survey was restricted to these eight study centres affiliated to Andhra University, for the sake of convenience, clarity and uniformity. The author is planning to survey all the U.G.C. study centres in Andhra Pradesh affiliated to Sri Venkateswara, Osmania Universities and the more recent Universities also.

**Department of Library and Information Science, Andhra University, Waltair.*

Summary and Results

Under the U.G.C. guidelines, a local committee may be constituted to look after the management of the centre. The Principal of the host college of study centre would be the Chairman of the committee and Librarian of the Centre the Secretary. Among the constituted committees 37.5% were working and 62.5% were not working.

According to the U.G.C. Annual Reports, number of study centres were established in 112 Universities all over India with the total expenditure of Rs. 44,68,813 during the IV and V plan periods. Out of it, nearly Rs. 5,11,000 was sanctioned to the eight study centres affiliated to Andhra University. Out of Rs. 5,11,000, an amount of Rs. 1,05,000 was sanctioned towards furniture during the IV and V plan periods. The survey noted that 87.5% of the centres were equipped with good furniture and seating arrangements. Out of these study centres, seven centres were provided with a total seating capacity of 236, besides other required furniture.

Out of the grant an amount of Rs. 2,10,000 has been sanctioned towards books during the IV and V plan periods. The total collection in the eight study centres was nearly 14,184, including multiple copies of texbooks, and a few standard reference books of a general nature. The study centre situated in Guntur acquired 1,100 bound volumes of periodicals.

Out of the eight study centres, seven centres (i.e. 87.5%) are practising the Dewey Decimal Classification scheme. Only one study centre (i.e. 12.5%) situated in Srikakulam has adopted the subject classification.

Among the eight study centres, three centres were practising the A.L.A. code (i.e. 37.5%). The ACCR (N.A. text) was used by one study centre (i.e. 12.5%) and three study centres were following the AACR-I, (i.e. 37.5%). Only one study centre (i.e. 12.5%) was following the book form. Among the 8 study centres, seven centres (i.e. 87.5%) exhibited a very clear and significant result in adopting one of the popular forms of cataloguing, whereas one study centre (i.e. 12.5%) is not following any standard form of cataloguing.

However, the survey reveals seven centres (i.e. 87.5%) were strictly observing the U.G.C. principle of not issuing the documents. But out of eight centres, one study centre (i.e. 12.5%) is issuing the documents only to the teaching staff, and thus violating the principle of issue. It is found that three centres (i.e. 37.5%); out of eight centres are attracting clientele below 20 per day. But the remaining 5 centres had good attendance i.e. 20 to 80 and above clientele per day. In an average 120 users are there in a day in the remaining 5 centres. The highest attendance i.e. 85 and above per day was in the centre situated in the M.R. College of Education, Vizianagaram.

The documents consulted in a day on an average in the study centre situated in Kakinada exhibited the highest rate i.e. 200 documents, whereas the study centre situated in Vizianagaram exhibited the second highest i.e. 150 documents a day on an average. Nearly 615 documents were consulted by the users in all the eight centres in a day on an average.

The University authorities ordered a change of nomenclature from U.G.C. Study Centres to Andhra University Study Centres.

Conclusion

The present survey reveals, that 75% of the centres were working very well; 12.5% normally working and only 12.5% showed failure. Over all, the normal functioning and success of the study centres affiliated to Andhra University was 87.5% and the malfunctioning and failure is only 12.5%.

Among the 96 colleges affiliated to Andhra University, nearly 40 colleges and one P.G. Centre are covered by the eight study centres. This survey clearly indicates, that the remaining 56 affiliated colleges might have benefited if such centres were available close to them.

Suggestions

During the VI plan period, the expenditure for the maintenance of study centres shall be borne proportionately by the concerned State Government and the University. As there are no specific guidelines by the U.G.C. the following suggestions are given for the maintenance of the Andhra University Centres :

(1) The University, in principle, has to collect Rs. 5 from each student at the time of admission into various courses.

(2) The University may collect Re. 1 from all the candidates who are appearing for University examinations i.e. from Matriculation to P.G. Courses for each and every appearance and the same may be included in the examination fee.

(3) The affiliated colleges under the university jurisdiction have to collect Rs. 2 from each candidate at the time of admission.

(4) In addition, to bear the salaries of the existing staff in all the centres, the State Government has to contribute 50% of matching grant to the accumulations referred to above. □

Convocation

Giani Zail Singh Addresses Convocation of Panjab University

Given below is the text of the Convocation Address delivered by Giani Zail Singh, President of India, at the Panjab University, Chandigarh.

"It is a matter of great pleasure for me to find myself amidst you all this morning. To be with the teachers and students of Panjab University and the citizens of Chandigarh, I have always enjoyed. But today I am here also to share my thoughts with you on a formal and solemn occasion. As on hailing from this region, I must acknowledge that Panjab University has always meant to the people of this region a great deal more than merely an examining body or another centre of learning. During its long and chequred career of over a century, earlier at Lahore, then scattered at a number of places before finding a permanent abode at Chandigarh, this celebrated seat of higher academic pursuits has developed an abiding emotional kinship with the people of the entire northern region of our country. Deriving its identity from Panjab, this University is the proud carrier of the cultural heritage of north-western India variedly known as Sapt-Sindhu, Panchal or Punjab. The literary mainstream which sprang with the intonation of the hymns of Rig Veda took on a myriad courses through the sacred and secular lore of Hinduism, Buddhism, Jainism, Sufism and Sikhism which all flourished in this land to enlighten the paths of man to self realisation. To be true masters of this rich tradition we have to continuously renew it and relate it to the present and the future of the Indian nation.

"I am told, the Panjab University maintains links with the farthest piece of land of our country in the sea—the Andamans and Nicobars, and also strives to maintain academic and cultural rapport with the people of the region whose fair springling can be found all-over the globe. This is a matter of great rejoicing and I join you in your glory.

"Even though I feel somewhat diffident to dwell upon the theme here, I must share with you my hope and concern that Panjab University should conserve and deepen its Panjabi ethos even while striving towards the Universality of spirit which all seats of higher learning are expected to cherish and promote. I for one do not see any contradiction between the specificity of form and the universality of spirit.

"Towards this goal, the faculty has a crucial role to play in keeping the banner of Panjabi excellence flying. For this purpose, it must strive to excel its high academic standards and contribute towards strengthening its composite, modern and secular orientation that stands out to the envy of many other leading universities.

"During recent years our faith in the essential humanistic vision of our Sages, Gurus and Saints has come under heavy strain. Our essential task today is to replenish the depleted sources of mutual understanding and renew our commitment to bring about a true brotherhood of man, which Guru Arjan Dev envisioned as a State of mind in which, "no one is a foe, nor alien; with every one we forge bonds of friendship".

"Today this University is better placed than ever before. With the sagacious, seasoned and sensitive Chancellor, Shri R. Venkataraman who is ever responsive to new ideas, I am sure, the University will acquire a fresh impetus and give tangible shape to the high ideals and values bequeathed to us by our national struggle for rekindling the soul of India under the leadership of Mahatma Gandhi and Pandit Jawahar Lal Nehru. The University is also fortunate to have Professor R.P. Bambah, a distignuished scientist, as its Vice-Chancellor under whose dynamic stewardship the University is sure to open out to new possibilities and uncharted directions. Our commitment today is to create citizens of India who are also citizens of the world. Towards that task all our energies have to be harnessed.

"I feel happy that the University has honoured Shri Hidayatullah, former Vice-President of India. He has been an eminent figure in the field of justice. He added dignity and glory to whichever post he held. By honouring him the University has honoured itself and strengthened the ideals it holds dear.

"The convocation of a University is an occasion for making an assessment of the prevalent educational system and its relevance to the needs and aspirations of the young people venturing out of the portals of the University to seek graduation into life. The British imperial regime gave us an educational system which laid stress on the elitist education. It was the pattern followed in their country and it suited essentially their needs as a great Imperial Power. The concept, however, was not entirely foreign to us. Truely speaking, our monastic Universities of Nalanda and Taxila also admitted only a chosen few. Chanakya had also been an advocate of such a system. But after Independence, we had to recast our priorities to relate the system to the needs of development and change rather than continuity and conservation. It is unfortunate that our British trained educationists took too long to respond to the mounting urges for social, economic and cultural transformation of India. Their response to the exhortations of political leaders was cold and hence it took us too long to effect a discernible change in the system. In the process, a new system seems to have emerged wherein it is being increasingly accepted that a University must respond to the needs of the community to develop and grow. The enunciation of the principle of social justice and equal opportunity enshrined in our Constitution has resulted in the liberal opening of colleges, offering courses in Humanities and Sciences. Not all these colleges have the necessary equipment and teachers on their faculty who possess the knowledge and calibre expected of them. At a very late stage the Universities came forward to offer such courses that could introduce our youngmen to the professions and vocations of their liking. The malady has been identified and touched upon but we have to grapple with the situation on a much broader scale.

"While I am all for vocationalisation to meet the challenge of un-employment among the youth, I have no inclination to discount the importance of education that aims at enlightenment of the mind. In this sphere, I wish the University Grants Commission to consider whether it will not be worthwhile to set up Colleges Examining Councils, along with the autonomous colleges to relieve the administrative burden on the Universities and to introduce a healthy competition among bigger and smaller colleges in the interest of academic standards. The Universities in that eventuality may be left free to try and prove their mettle in the specialised fields of research in various disciplines. We have to find ways to keep pace with the advancement of knowledge all over the world and lay more stress on exchange of expertise among the academicians.

"For effecting reform in our educational system, we need not look elsewhere. What we have to do is to look around and make such innovations in the system that cannot only stem the rot but inspire our youngmen and women to look ahead with a faith in the future. My Government has decided to give priority to the educational sector. We ought to have a national education policy to integrate the Indian people culturally and emotionally, promote Indianisation of consciousness and kindle hopes for a brave new order in the minds of our bewildered and disgruntled youth. I do not believe they are going astray. Only we have lost our faith in ourselves and hope in them.

"I do hope that the new generation will receive love and affection from teachers, administrators, public leaders and elders in the society like parents and to make the students feel that they are working for their own welfare. I do not blame the students alone; but those who exploit the students for their selfish interests are to be blamed.

"Here I am tempted to relate that five thousand years ago, when the first ever book of knowledge was written in Chinese, the author bemoaned the fact that the new generation was getting spoiled. Ever since, this slogan has been repeated. Each generation of elders asserts that they are better than youngsters. The good old days is their byword. But the march of history has proved this dictum wrong. World has progressed in every sphere. The bounties of nature have been exploited to the benefit of man. In science and technology we have come a long way from animal-back to airbus and also in means of destruction from stone spear to guided missiles and horrible bombs. In this process, we have to admit that every generation has improved, howsoever imperceptibly, upon the past. Where we have failed is not to have anchored the technical skill to spiritual purpose. We have to devise means to resolve the dichotomy between the culture of science and the culture of humanities. I am sure the destiny of Indian is safer in the hands of youth, who have since taken over from the generation that toiled to see India free. That they will be able to take India to the summit of development, progress and cultural renewal is my faith and the hope of the nation.

"The times through which we are passing will not judge us by our exhortations but by our deeds. To be sure, the nation faces today its moment of truth. It calls not only for daring to experiment but also deep self-reflection. It will not do to find fault only with the system or with others. There is no scope for any further self-glorification or self-pity. There could not be a better forum for introspection than the Universities. I believe and hope that the faculty of this University will not be found lacking in this endeavour and in the still more vital undertaking of helping in re-formulating the national will and re-asserting the inherent strength of the great Indian people to prevail and triumph over the difficulties which stare us in the face.

"Before I conclude I would like to express my gratitude to the Chancellor Shri R. Venkataraman and the Vice-Chancellor Professor R.P. Bambah to afford me this opportunity for a pilgrimage to this seat of wisdom and knowledge which has as its motto the ancient seer's urge for being led from darkness to light, from falsehood to truth and from bondage to freedom." ☐

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Secretary to Director
THAPAR INSTITUTE OF ENGINEERING AND TECHNOLOGY
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CALENDAR OF EVENTS

Proposed Dates of the Event	Title	Objective	Name of the Organising Department	Name of the Organising Secretary/Officer to be contacted
June 22-24, 1985	National Conference of Employers on how to establish links between Schools and Industry for the implementation of vocational education	For effective interaction and closer collaboration between schools and industry for the proper development of vocational education system	Birla Institute of Technology and Science, Pilani	Dr. V. V. Mandke Dean, Practice School Divn, BITS, Pilani
July 1-21, 1985	UGC sponsored short-term Institute on Polymer Science/Technology for teachers in Science and Engineering Colleges.	To impart training in theoretical and practical aspects of Polymer Science/Technology to teachers and research Scientists making use of the large facilities possessed by the Department.	Department of Polymer Science & Rubber Technology, University of Cochin, Cochin-22.	Dr. D. Joseph Francis Professor & Head Department of Polymer Science & Rubber Technology, University of Cochin, Cochin-22.
July 29-Aug 24, 1985	UGC Sponsored Summer Institute on "Computer Aided Numerical Analysis and Operations Research".	To familiarize the teachers on the programming languages and their applications; to encourage researchers to take-up real and sophisticated research problems which require computational techniques.	Department of Mathematics & Statistics, University of Cochin, Cochin-22.	Dr. T. Thrivikraman Department of Mathematics & Statistics, University of Cochin, Cochin-22.
August 5-Nov 29, 1985	Course on Remote Sensing and its applications to various themes such as Water resources, Mineral resources, Terrain evaluation and Land use planning	To train middle level in-service engineers and scientists in the area of fundamentals of satellite remote sensing and its application	Centre of Studies in Resources Engineeing, I.I.T. Bombay.	Dr T.V. Pavate, Chief Project Engineer, Training Extension and Project Cell, I.I.T., Bombay.
September 9-12, 1985	UGC Sponsored All India Symposium on Recent Trends in Insect Endocrinology	—	Department of Zoology, Govt. College, Ajmer.	Shri J.N. Mathur, Director
September 26-28, 1985	UGC Sponsored National Seminar on "Behaviour Modification and Mental Health"	To investigate efficacy of suitable Behaviour Modification teachings in our Culture and Application of Behaviour Modification teachings in different areas of Mental Health.	Deptt. of Psychology, Dayalbagh Educational Institute, Agra.	Dr. (Miss.) S.P. Sinha, Reader & Head, Deptt. of Psychology.
November 28-29, 1985	**International Conference on New Technologies in Higher Education**	**To assess the possibilities of the now available new technologies in the background of the broad social and cultural context and the state and trends of Higher Education in India and other developing countries**	**Association of Indian Universities, IIT/ Delhi, JNU, Jamia Millia and University of Delhi**	**Prof. Tapas Mazumdar (JNU), Prof. S. Shukla (Jamia Millia), Prof. L.R. Shah (JNU)**
December 12-14, 1985	Asia Pacific Symposium on Wind Engineering	Nature of wind and effect on structures and study of damage and its socio economic implications	Civil Engg. Department, University of Roorkee, Roorkee	Dr. S. K. Pathak, Organising Secretary
December 16-18, 1985	Indian Geotechnical Conference	To advance the state of knowledge about the geotechnical engineering and to give definite direction to the future research work	Earthquake Engg. Department, University of Roorkee, Roorkee	Dr. V. H. Joshi, Organising Secretary

JNU Awards Certificates to Kampuchean Students

Fourteen Kampuchean students who had come to India to master English language have returned home after successfully completing the three-year Special English Course devised by the Centre of Linguistics and English of the Jawaharlal Nehru University. Due to historical reasons, these students could not complete their schooling in Kampuchea where most of the people do not know English.

At a special function held at the CRS Auditorium, early in April, the Vice-Chancellor, Prof. P.N. Srivastava awarded certificates to these boys and girls who had come to JNU under the Government's Indian Technical and Economic Cooperation (ITEC) programme.

Speaking on the occasion, Prof. Srivastava expressed the hope that the day will soon come when some of these young students would come back to India as representatives of their country or would meet the challenging task of teaching English to their countrymen in order to improve its communication with the outside world and help reconstruct Kampuchean economy.

The Ambassador of the People's Republic of Kampuchea H.E. Theam Chunny who was present at the occasion thanked JNU for providing facilities to Kampuchean students for learning English and said that he was confident that these students would now be able to use English in an effective way to help their country in the field of international relations.

Earlier, giving details of the courses devised at JNU, the Project Director, Shri S.K. Sareen said that when the students came to JNU in 1982, their goal was to master the English language to be able to use the same with skill and ease. To help them achieve this target, an Intensive course was worked out for the students and this was later further extended by one year. During three years of their stay, the students were given courses in spoken English, grammar, vocabulary, reading comprehension, reading for basic communication skills, translation and simultaneous interpretation.

The courses involved about 30-35 hours of English every week including 8 hours of Language Lab and 5 hours of tutorial work in smaller groups of three to four students each. These groups later started a wall magazine.

During three years of their stay at JNU, the students made themselves familiar with Indian life and culture to which their own culture bears remarkable resemblances. Their stay in JNU hostels helped them to attune themselves to Indian University life and also exposed them to the regional variations of Indian English in the speech of fellow Indian students. In the course content, care was, however, taken to provide them with models of standard English.

New courses at AMU

The Aligarh Muslim University has introduced several new courses in Engineering and modern technology in order to provide new opportunities of employment for the youth and for promoting modern technology in general.

The University has prepared a comprehensive plan for the facilities of the engineering and technology with an outlay of Rs. 10 crores.

The Institute of Petroleum and Chemical Engineering has already started post-graduate classes in Petroleum refineries from the current academic session. Other courses in the field of Petroleum will be started soon.

The University Grants Commission has sanctioned Rs. 1.12 crores for consolidating the Chemical Engineering Programmes and for starting Petroleum Technology.

The post-graduate course in Petroleum refining is expected to form a nucleus for academic activity in this area. It will go a long way towards bridging the gap existing between Chemical Engineering curricula and the needs of modern refineries.

While framing the course structure, the educational background of the Chemical Engineering graduates, they are expected to perform in Refinaries after completion, has been kept in view. The programme is designed to provide a sound basic knowledge of Chemical Engineerring principles, as applied to the problems in petroleum Industry.

It will also be helpful in promoting research and development programmes in collaboration with the Petroleum Refinaries and Petro-chemical Industry on Laboratory and Pilot Plant Scale.

During the last year, equipment worth Rs. 80 lakhs have been ordered for the Engineering College. The object is to remove the obsolescence, build-up modern laboratories and prepare base for developing new programmes during the next plan period.

Department of Electronics, Computer Science and Engineering in Metallurgy have been formed and production Engineering, Environmental Engineering, Electronics, Metallurgy and Instrumentation Technology Programmes are to be started in the Engineering College.

An Institute of Food Craft is already started and three courses like postgraduate Diploma in Travel and Tourism, Certificate in Cookery and Certificate in Restaurant and Counter Service have commenced from this session.

A sum of Rs. 90 lakhs was approved for the development programme of the University Polytechnic and the new courses like Diploma in Architectural Assistantship, Diploma in Applied Electronics and Diploma in

Costume Designing and Interior Decoration. The University Polytechic is now converted to "Community Polytechnic".

The U.P. Government has offered to establish a training centre in the Women's College of the University, which will impart training to the girls for the production of the electronic goods.

It will be the first centre of its type in U.P. The State Government has approved a sum of Rs. 10.5 lakhs for the purpose.

Workshop on computer-assisted instruction at IIT, Bombay

A three-week workshop on Computer-assisted Instruction was inaugurated at the Indian Institute of Technology, Bombay on May 27, 1985 by Prof. B. Nag, Director of the Institute.

Speaking at the inaugural function, Prof. Rais Ahmed Vice-Chairman, UGC, dispelled the fear that computers in schools and colleges would replace teachers. He emphasised the role of teachers in making use of computers as an effective educational tool. He said that for preparing one hour of student in a computer, teachers would have to spend 200 hours. He further added that use of audio-visuals like television and tape recorders had produced better results as compared to those who had conventional methods of teaching.

Highlighting the need for self learning. Pro. Ahmed quoted a study conducted by a Vice-Chancellor in which he had found that the results among a group of students who had no teachers were as good as among those who had regular teachers.

Prof Ashok Chandra, Educational Adviser in the Union Ministry of Education said that an effort should be made to generate an awareness that computer was a potential tool. He added that Computer-aided learning aimed at complementing teachers rather than replacing them. Use of computer simulations enabled the students to experiment with situations which would otherwise be too expensive and time consuming.

Prof. J.R. Issac of the Department of Computer Science and Engineering who acted as Coordinator of the workshop felt that preparation of software for computer assisted education should not be left to commercial companies and teachers themselves should take up the task.

UGC plans new degree course in sports

The University Grants Commission, it is reported, is considering a proposal to introduce a 3-year degree course in Physical Education, Health Education and Sports in universities and colleges. This course would be different from those being conducted for teachers in Physical education.

The objective of the new course is to provide facilities to students to select this discipline for his/her first degree in colleges of general education (viz. arts, science and commerce and multi-disciplinary colleges). The course will provide facilities for students with an aptitude for sports and games to study this discipline scientifically and achieve a reasonable level of attainment in four sports/games or two sports/games and one vocation oriented course. Besides athletics, gymnastics and yoga, they can opt for one sport/game of their choice.

Students who pass the Senior Secondary School Certificate or Senior Cambridge or Indian School Certificate after twelve years of schooling or Intermediate Certificate or Certificate in Physical Education of one year duration from any recognised institution with a total period of 12 years of schooling and with State level participation in sports and games will be eligible for the course. The age limit for this course is 20 years. However, the age may be relaxed up to 22 years in case of national/international sportsmen and for those belonging to scheduled castes and the scheduled tribes.

The course will be introduced in a phased manner and not more than 50 students will be admitted in the first year of the course in each college.

Collegiate cell at Andhra Pradesh

The collegiate cell which is the academic wing of the Directorate of Higher Education, Government of Andhra Pradesh conducts in-service training and orientation programmes for the college teachers, and principals. It has completed a decade of service in serving the cause of college teachers and educational administrators and has also brought out publications such as monographs on lecture methods, examination reforms, autonomous colleges etc. Handbooks on educational methodology, restructured courses etc., have also been prepared.

During the year the cell coducted various programmes for the benefit of the teachers. These included: (1) Short course in English; (2) Induction course in Civics; (3) Refresher course in History; (4) Induction course in Chemistry; (5) Orientation Programme in Economics for junior lecturers; (6) Conference of Principals of junior colleges; (7) Seminar on perspectives in Higher education; and (8) Govt. degree college principals conference.

New University starts functioning in West Bengal

Vidyasagar University, named after the great social worker Ishwar Chandra Vidyasagar, has started functioning with effect from 1st June, 1985 in West Bengal, it is reported. According to Vice-Chancellor of the University. Prof. Bhupesh Mukherjee, 30 colleges in Midnapore district have been transferred to this new University. Post-graduate subjects which would be taught at present includes rural economics, political science, tribal culture, library science and applied mathematics with computer science.

BITS launches M. Phil. (Applied) programme

From 1985-86 the Birla Institute of Technology and Science, Pilani is launching a unique two-year higher degree programme at its off-campus centres. BITS has already evolved and successfully operated the Practice School and M.E. (Collaborative) programmes at the first and higher degree levels. At present, these programmes are operated at its off-campus centres with over 90 different collaborating/ associating/ sponsoring/like minded organisations across the country. M.Phil. (Applied) now throws open the much awaited another avenue for a very wide range of personnel, leading ultimately to a Ph.D. The programme can be pursued in an industrial setting at any off-campus centre of BITS. It incorporates development of relevant skills considered necessary in a professional environment in the first year, followed by the provision of a desired orientation, depending upon an individual's background and career objectives, in the second year.

The normal input to the programme is any first degree of BITS or its equivalent but persons of high and proven professional standing on a case by case basis are also acceptable. The duration of the programme is two years. The first year consists of 8 courses (4 per semester) and has two-fold educational objectives : (1) introducing the student to modern analytical methods in terms of computers, technical communication, management etc.; and (ii) providing an opportunity to the student to apply the methods of analysis thus acquired to project-oriented situations identified against their professional and educational background. The second year of the programme consists of two internship courses. All the courses are unstructured with no formal classroom teaching. The emphasis is on intricate and challenging application of knowledge in the setting of production or ongoing activities of the participating organisations so that the environment itself acts as a laboratory.

Jammu Varsity NSS volunteers participate in national integration camp

A Jammu University contingent consisting of ten NSS Volunteers drawn from the various teaching Departments of the University participated in the National Integration Camp organised under the auspices of the University of Gorakhpur from 30th May to 4th June 1985 at Kushinagar.

The purpose of the camp was to promote and foster the naional unity among Youth to tenarate a feeling of harmony and brotherhood.

Extension lecture at AMU

Professor Samuel Warren Carrey of Tasmania University, Australia, delivered an extension lecture on "Expanding Earth" at Geography Department, Aligarh Muslim University.

In his lecture, Prof. Carrey said that the earth was comparatively of much smaller size in the beginning and expanded slowly by depositing concentric layers round the central core. However, the expansion rate is very slow to the tune of a fraction of millimeter per year and the expansion may not be visible in one's life time.

He said that the formation of layered structure round the earth was supported by seismic evidences. Earth expansion hypothesis was supported by the present distribution of land masses on the earth i.e., continents. It also predicts that the oceans were formed in the following chronological order— Pacific, Atlantic, Indian, Red Sea etc., which is well supported by other geological evidences.

The lecture was attended by geographers, geologists and scientists from various other fields. It engendered new enthusiasm and curiosity among in new perspective and provided estimulus to carryout very fruitful and meaningful research activity.

New PG courses at Allahabad Varsity

The University of Allahabad proposes to start several new postgraduate courses with effect from 1985-86 academic session.

These include B.Ed., M.A. in Sociology, M.A. (Anthropology) and M.Sc. in Geology. The intake of students in these courses will be limited and restricted during the initial years, pending the creation of necessary teaching and research facilities in these fields. Efforts are also being made to initiate a number of job-oriented inter-departmental programmes, particularly at the bachelor degree level.

News from Agril. Varsities

KAU budget for 1985-86

The Kerala Agricultural University budget for 1985-86 showed a surplus of Rs. 2,78,246. Presenting the budget, Shri Therambil Ramakrishnan, Member, Finance Committee said that in the current financial year the University expects revenue receipts of Rs. 19,04,14,546 and an expenditure of Rs. 19,01,36,300.

He also pointed out that during the past year the University could maintain high standards in the fields of education, research and extension. It was revealed that the University proposes to start this year an Agricultural Engineering College at Tavanur which will be named after the great Sarvodaya leader and Gandhian 'Kelappaji.'

Steps are also being taken to start faculties in Forestry, Cooperation & Banking and Home Science.

The budget has earmarked 46 per cent of its revenue for research. In the current year the I.C.A.R. is expected to sanction 10 research projects costing Rs. 310 lakhs. Under various I.C.A.R. schemes the number of research projects under way are 26 in agriculture, 3 in animal sciences and one in fisheries. Besides, during the VII Plan it is proposed to start seven centres for Advanced Studies in animal sciences, plant protection, pulses and oil seeds, bio-technology, agro-energy, weedicides and tropical soils.

The University is also considering various schemes to generate more internal revenue which would enable it to be less dependent on finances from the State Government and I.C.A.R. For this purpose the surplus land available in the various campuses would be used for commercial crop production. Fish rearing in the Vellayani backwaters is also proposed.

The Extension Directorate would be strengthened to play a much bigger role in disseminating new knowledge in farming techniques. For this, extension centres will be established in all Research Stations and regional extension centres at the Regional Research Stations.

Besides the two Krishi Vigyan Kendras at Pattambi and Ambalavayal, the University would start another Kendra at Manjeswar in Kasargode district during the current year.

Training programme introduced at Sher-e-Kashmir University

The Sher-e-Kashmir University of Agricultural Sciences, Srinagar has introduced a two-year training programme for Field-cum-Laboratory Assistants. This programme is being conducted at the Krishi Vigyan Kendra/Extension Training Centre, Malangpora and Extension Training Centre, Jammu of the University.

The objective of the programme is (i) to impart learning by doing to trainees in agriculture and allied fields; and (ii) to impart skill-oriented apprenticeship training to Field-cum.Laboratory Assistants on fields and in laboratories.

In the first semester subject of applied nature like Agronomy; Horticulture; Animal Husbandry including Bio-Chemistry; Botany and Plant Breeding; Soil Science; Plant Pathology; Entomology; Sericulture; Extension Education and Farm Management and Statistics. After theoretical orientation in different subjects the candidates are required to undergo apprenticeship training for one and a half year at different research stations and sub-stations for getting skill oriented training.

News from UGC

INSAT-1B Programme of UGC

Between 24th and 30th June, 1985, the following schedule of telecasts on higher education through INSAT-IB under the auspices of the University Grants Commission will be observed. The programme is of one hour duration every day from 12.45 p.m. to 1.45 p.m. (Repeated from 4 p.m. to 5 p.m.) and will be available on the TV network throughout the country. For the viewers in Delhi and surrounding areas, these programmes can be seen on the second channel.

24.6.85

"Simple Experiments with Carbon Electrodes and fused bulbs"
"Methods of Observing"
"Auger Electronics-II"
"Space Station Plastics"

25.6.85

"Evolution Series : Out of the Past-I"
"Evolution : Out of the Past-II"
"Evolution : Out of The Past-III"

26.6.85

"Age of Man in Space"
"What is an Orbit"
"Inventions of Prof. Alexan"
"DNA"

27.6.85

"Evolution Series : Relationship"
"Evolution Series : Relationship"
"Animal in focus-II"
"Ancient in focus-II"

28.6.85

"Yellow tones The secon hundred years."
"Coastal Protection"
"High above the dust."

29.6.85

"A Sea We cannot sense"
"Sick Ocean"
"Weather"
"Man and Land (1982)"

30.6.85 (Sunday)

NO Telecast

Forty more colleges selected under UGC scheme

The University Grants Commission (UGC) has selected 40 more colleges for participation in the "College Humanities and Social Sciences Improvement Programme" (COHSSIP) beginning this year. The 40 Colleges, comprising 28 arts and 12 teacher training institutions, have been drawn from Osmania, Delhi, Gujarat, Kurukshetra and other universities. These colleges have been asked to send their proposals within the ceiling of Rs. Three lakhs for conducting these programmes.

The COHSSIP programme introduced ten years ago aims at improving the teaching of humanities and social sciences at the undergraduate levels with particular reference to the adoption of new teaching method, extension of library, services, examination reforms, remedial teaching and field work.

News from Abroad

China to overhaul education policy

According to press reports, China plans to overhaul its educational system to turn out millions of skilled workers and professionals for its "socialist modernisation" programme.

A policy document issued by the ruling Communist Party said China's present educational system and methods were not in keeping with this objective.

Weak elementary education shortage of schools and qualified teachers, and retarded development of vocational and technical education were listed in the document as among the major problems. Outdated textbooks and over-specialisation in certain faculties also hampered the development of modern science and culture in China, it said.

Under the planned reform, China will "step by step" introduce a system of compulsory education, striving to make junior middle-school education universal in the next six years in the coastal areas, and within 10 years, in the countryside.

Describing vocational and technical education as the weakest link in the present system, the document said more junior middle-school graduates would be encouraged to enter technical schools and the graduates of these schools would have priority in job assignment.

The reports further say that the policy aims at increasing secondary schools specialising vocational and technical training from 3 per cent to 50 per cent "giving higher education institutions greater freedom" changing university and college admission pattern to accommodate those sponsored by firms which could later absorb them.

Mechanical banana harvester developed in Australia

A machine which takes the backache out of banana picking has been designed and built by the Western Australian Department of Agriculture, according to Mr. Terry Muller, Manager of the Gascoyne Research Station at Carnarvon.

Driven by a mini-tractor and towing a specialy designed trailer to carry the banana bunches, the machine has a hydraulic arm which lifts and extends to a hanging bunch of bananas. A grab on the end of the arm holds the bunch while it is mechanically cut. The arm then retracts and lowers the picked bunch to stack it on the trailer.

"Mechanical harvesting requires a different planting configuration and sprinkler layout," Mr. Muller said. "It's a bit slower than hand-harvesting, but there's no backache involved and that's one of the major problems banana growers have." [Courtesy : Australian Information Service Agril. Newsletter]

Sports News

Sports Authority of India

The Sports Authority of India (SAI) has embarked on an ambitious five year programme of 'catch em young' to provide the nucleus for the country's future national and international level sportsmen. These include adoption of 100 schools spread all over the country, spotting of talent in tribal areas for development of specific games like archery and other rigorous sports in which the tribals excel, introduction of neighbourhood sports facilities and in the longer run launching of rural level sports. The annual budget of the SAI is Rs. 7.6 crores and the SAI proposes to increase the plan budget from Rs. 1.5 to Rs. 3 crores.

Elaborating on the schemes, the SAI chairman said, "on a priority basis some 100 schools with hostel and playground facilities would be selected with specific understanding that they would club four other schools in their region which had no playgrounds. They would then promote three other sports, one of them the most popular in the region, like football in Calcutta". The scheme would apply to both boy and girl students under 12 years. Those selected would be provided free scholarship of Rs. 100 per month as stipend and free equipment and coaching facilities by the SAI. The SAI has also planned comprehensive programme to tap potential talent in sports popular in coastal and tribal areas. Volunteers would be sent to watch archery competitions during local "melas" in the tribal areas spreading from the tribal eastern block to tribal areas in Madhya Pradesh and Rajasthan. About 100 young archers would be selected and taught to handle sophisticated bows and arrows. The SAI expects to spend Rs. 20 lakhs under this programme, spread over five years. Gen. Narinder Singh said, "SAI also intends to promote another coastal sport i.e. rowing. Boys between the age of 14 to 16 years would be selected to learn the modern technique.

The SAI plans to spread the concept of neighbourhood sports facilities in small townships around major metropolis. Such a scheme was introduced in Saket in South Delhi recently and proved quite popular. According to Maj. Gen. Narinder Singh, the concept based on a scheme envolved by Terry Frost in Canada, initially involved introduction of jogging clubs. The SAI will sponsor jogging competitions and the money collected from such competitions would be utilised for improvement of sports facilities in the region.

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BIRSA AGRICULTURAL UNIVERSITY

RANCHI-6

Competitive Test for admission to the under graduate Programme in : (i) Agriculture (ii) Veterinary Science and Animal Husbandry (iii) Forestry.

Eligibility :

(a) Candidates who have passed the Intermediate in Science or 10 plus 2 or equivalent examination with following combination of subjects can sit at the Competitive test 1985 :

(i) Physics, Chemistry and Biology or Mathematics for B.Sc. Agriculture and B.Sc. Forestry Courses.

(ii) Physics, Chemistry and B.Sc. Biology for Bachelor in Veterinary Science and Animal Husbandry Courses.

(b) Candidates who have appeared or are shortly to appear at I.Sc., 10 plus 2 or its equivalent examination can also sit at the Competitive test but will be considered for admission in case they complete successfully, only if they submit their result (i.e. attested copies of marksheet) of I.Sc. or equivalent examination at the time of admission.

(c) Minimum age requirement is 17 years on 1.8.1985.

2. Prospectus and Application forms : if the application form is to be sent by post a 27cm. x 12 cm self addressed and stamped envelope (Rs. 1.50 by ordinary and Rs. 3.70 by registered post as desired by the candidate) must be enclosed and addressed to Professor in-Charge, Competitive Examination, College of Veterinary Science and A.H. Ranchi 830007. No erasion or correction in the postal order is permissible. Application forms can also be obtained from the Deans of the following Colleges of the University viz, Ranchi Agriculture College, Kanke, Ranchi-834006, and Ranchi Veterinary College, Kanke Ranchi-834006, from the students counters of both colleges on payment by crossed Indian Postal Order of Rs. 5/- payable to Comptroller, Birsa Agricultural University, Kanke, Ranchi-834006. Cash or Money order will not be accepted.

3. (a) The application forms will be available from 5.6.85 onwards during working days.

(b) Last date for receipt of application form alongwith Examination fee is 5.7.85.

(c) Examination Fee : Rs. 25/- (Rs. 6.25 in case of S.T./S.C. Candidates) in the form of crossed Bank Draft obtained from any scheduled Bank payable at Ranchi in favour of the Comptroller, Birsa Agriculture University, Kanke, Ranchi. Postal Order and Money Order or cash will not be accepted. The fee is non refundable even if the candidate is not found eligible to appear at the test. The tentative date on which the Competitive test will be held is 11.8.85 to be confirmed through admit card and notified in news papers.

4. Reservation of Seats : As per University Rules.

5. Limited number of old question papers are available on sale from the student counter of the above mentioned Colleges @ Rs. 5/- per set in Indian Postal Order only payable to Comptroller, Birsa Agricultural University, Kanke, Ranchi-834006. It will not be possible to send the old question papers by post.

6. Candidates who wish to apply for admission in the College of Forestry are hereby informed that they will have to pass a Physical fitness test be covering a 25 km. distance in 4 hours if they become eligible for admission after the competitive test. They must have the following minimum physical standard, Height 163 cm., Chest unexpanded 79 cm. and expanded 84 cm.

REGISTRAR

BANARAS HINDU UNIVERSITY

ADMISSION NOTICE 1985-86

Applications are invited on the prescribed application forms for Admission to the following courses:

Faculties of Arts, Social Sciences, Science and Commerce

Courses	**Eligibility Qualifications**
1. B.A. (Hons.) (3-Year Degree Course)	Passed the 10+2 pattern or any other equivalent examination of a recognised Board or University with a minimum of 45% marks in aggregate and 50% marks in the subject concerned in which honours is taken or 50% in aggregate for non-subject courses.
2. B.Sc. (Hons.) (3-Year Degree Course)	Passed the 10+2 pattern or any other equivalent examination of a recognised Board or University with a minimum of 45% marks in aggregate and 50% marks in the Science subjects.
3. B.Com. (Hons.) (3-Year Degree Course)	Passed the 10+2 pattern or any other equivalent examination of a recognised Board or University with Commerce, Economics or Mathematics as one of the subjects with a minimum of 45% marks in aggregate and 50% in the subject concerned in which Honours is taken or 50% aggregate for non-subject courses.
4. M.Com. (2-Year)	Three-Year B.Com. (Hons.)/B.Com. (Pass) under 10+2+3 pattern or an equivalent examination with a minimum of 48% in aggregate.

General

1. 22.5% Seats (15% for Scheduled Caste and 7.5% for Scheduled Tribes) are reserved for Scheduled Caste and Scheduled Tribe applicants which will be filled on merit within the quota, provided they have passed the qualifying examination.
2. The application forms are not transferable. Applicants must apply separately for each course/college/faculty. The applicants have to satisfy all the other qualifications as given in the Bulletin of Information. Incomplete application forms will not be considered. No hostel accommodation is guaranteed. The applicants who are admitted will have to make their own arrangements till they are allotted seats in a hostel on the basis of merit and other criteria laid down by the Faculty/College for the purpose. The University will not be responsible for any postal delay and applicants are required to check their names in the Admission List on the Notice Board of the Faculty/College.

Application Forms and Information Leaflet are obtainable from the following respective Faculty/College on pre-payment of Re. 1/- at the Counters or by sending a self-addressed unstamped envelope of 23 cm x 10 cm size along with a Postal Order for Rs. 6/- drawn in favour of the Dean/Principal concerned, payable at the Malaviyanagar Post Office, Varanasi-221005.

For B.A. (Hons.)	Dean, Faculty of Arts/Social Sciences
M.Com./B.Com. (Hons.)	Dean, Faculty of Commerce
B A./B Sc. (Hons.) (For girls)	Principal, Mahila Mahavidyalaya
B.A./B.Com. (Hons.) (Evening College)	Principal, Evening College (Kamachha)

Last Date for :

Postal requests for application forms	25th June, 1985
Sale at the Counter	13th July, 1985
Receipt of duly completed application forms	15th July, 1985

Applications duly completed and accompanied by the relevant marks-sheets and certificates should reach the Office of the concerned Dean/Principal on or before the last date as specified above. Applications received after the last date even by post will not be considered. Incomplete Admission forms will be rejected.

REGISTRAR

AIU Library & Documentation Services

One of the important functions of the Association of Indian Universities is to act as a clearing house of information on higher education in the country. Towards this end the AIU Library is engaged in collection building and developing instruments for the dissemination of research information. Over the years a valuable collection of books and documents on different aspects of higher education has been acquired.

The Library has also developed Bibliography of Doctoral Dissertations as an effective tool in the dissemination of research information. Retrospective bibliographies covering the period 1857-1970 and 1970-75 were the first to appear. Effective 1975, however, the bibliography is issued annually in two volumes. One volume deals with Natural and Applied Sciences while the other records doctoral degrees awarded in Social Sciences and the Humanities. In addition to the normal bibliographical details like the name of the Research Scholar, the title of the thesis, years of registration for and award of the degree, and the name of the University accepting the thesis for award of a doctoral degree, the bibliography also gives name and complete address of the supervising teacher and an availability note that seeks to inform whether a copy of the dissertation is available for consultation and use in the University Library/Department or Registrar's Office.

The columns 'Theses of the Month' and 'Research in Progress' are intended to cut out the time lag between the receipt of information and its inclusion in bibliography. Such Universities as are not sending us regular information in respect of Doctoral Theses accepted and research scholars enrolled are welcome to make use of these columns.

The Library is situated at 17-B, Indraprastha Marg, New Delhi-110002. It is open from 9.30 a.m. to 5.30 p.m. Monday through Friday.

RESEARCH IN PROGRESS

A list of Research Scholars Registered for Doctoral Degrees of Indian Universities

PHYSICAL SCIENCES

Mathematics

1. Kavita Devi P. *Theoretical approach to film lubricated bearings in a rotating frame*. Mani U, Imphal. Dr. R.S. Gupta.
2. Srivastava, Vindhyavesini. *Summability and metric space*. BHU, Varanasi. Dr. A. Saxena.
3. Verma, Vandena. *Applied functional analysis*. BHU, Varanasi. Dr. R.N. Mukherjee.

Physics

1. Abdul Mohin. *Speaker identification studies from the accoustic analysis of speech signal and recognition using microprocessor based system*. U Delhi, Dr. V.P. Bhatnagar and Dr. S.S. Aggarwal.
2. Datta, Vijay Kumar. *Asymmetric rotor model description of some transitional nuclear*. HPU, Shimla. Dr. S.P. Sud and Dr. K.K. Gupta.
3. Dixit, Pradip Kumar. *The study of glass transition thermodynamic optical and transport properties in semi-conductors*. HPU, Shimla. Dr. K.G. Sharma.
4. Kumareson, P. *Growth and characterisation of double sulphates and tartrates*. U Ker, Trivandrum. Dr. S. Devanarayanan.
5. Mehta, Devinder. *Nuclear spectroscopic studies in certain nuclei*. Pb U, Chandigarh. Prof. P.N. Trehan and Dr. T.S. Cheema.
6. Sanjeev Kumar. *The study of thermodynamic and transport properties in dilute magnetic alloys with CEF split impurities in the presence of magnetic field*. HPU, Shimla. Dr. K.C. Sharma.
7. Singh, Mayengbam Dilip Kumar. *Studies on the passage of charged particles in amorphous solids*. Mani U, Imphal. Dr. C. Amuba Singh.
8. Vaid, Bikram Ashok. *Structural disorder model for melts, amorphous semiconductors and pressure induced transition* HPU, Shimla Dr. K.C. Sharma.

Chemistry

1. Alice, C.J. *Inorganic chemistry: Coordination compounds* . U Ker, Trivandrum. Dr. C.P. Prabhakaran.
2. Goraya, Piara Singh. *Physico-chemical studies of electrolytes in mixed solvents*. Pb U, Chandigarh. Prof. S.P. Narula and Dr. S.P. Jauhar.
3. Kuncheria, Babu. *Studies on some coordination compounds of thorium*. U Ker, Trivandrum. Dr. P. Indrasenan.
4. Mehta, Surinder Kumar. *Thermodynamic properties of some binary and ternary systems and their correlation with their viscosities*. Pb U, Chandigarh. Prof. R.K. Dewan.
5. Mohana Kumar, C. *Complexes of rare earth metals*. U Ker, Trivandrum. Dr. P. Indrasenan.
6. Saha, Haralal. *Thermal decomposition reactions of metal complexes in solid state*. Mani U, Imphal. Dr. Samiran Mitra.
7. Singh, Langonjam Kanhai. *Synthesis characterisation and thermal investigation of some inorganic and coordination compounds in solid state*. Mani U, Imphal. Dr. Samiran Mitra.
8. Singh, R.K. Hemakumar. *Reaction of transition metal ions with nitrile group in presence of alcohols*. Mani U, Imphal. Dr. A.K. Manihar Singh.
9. Subodh Kumari. *Synthesis of some biologically active heterocyclic compounds*. U Delhi. Prof. V.K. Ahluwalia.
10. Tukaram, Thorat Marutirao. *Polymer supported reactions in organic chemistry*. Shivaji U, Kolhapur. Dr. M.M. Salunkhe.

Earth Sciences

1. Chakravarty, Mihir Ranjan. *Studies on the seismicity of North Eastern India including earthquake-spectrum-analysis techniques*. Mani U, Imphal. Dr. D.K. Ganguly.
2. Ibenyaima Devi Hijam. *Geomorphological studies along Imphal River Basin*. Mani U, Imphal. Dr. R.P. Singh.
3. Baljinder Kumar. *Investigations of radioactive mineralisation in fossil-rock-water (surface spring) cycle in the Siwaliks of Haryana and Himachal Pradesh using fission track and*

related techniques. Pb U, Chandigarh. Prof. Ashok Sahni and Dr. K.P. Singh.

4. Gitabali Devi, Hidanmayum. *Micro-level planning : A case study of Bishenpur District, Manipur*. Mani U, Imphal. Dr. R.P. Singh.

5. Radhakrishnan Nair, P. *Hydrogeological studies of parts of Trivandrum*. U Ker, Trivandrum. Dr. P.K. Rajendran Nair.

6. Narang, Rajeev. *Geology and its environmental hazards: A case study of Dehradun—Mussoorie area, U.P. Himalaya*. Pb U, Chandigarh. Prof. V.J. Gupta and Dr. K.P. Singh.

7. Ram Pal Singh. *Rb-Sr dating and Sr. isotopic studies of some granites and gneisses of Kumaun and Garhwal Himalaya, U.P. India*. Pb U, Chandigarh. Prof. V.B. Bhanot and Dr. P.K. Mehta.

8. Suresh Kumar. *Rb-Sr geochronological studies of some granitic and gneissic rocks of Himachal and Kashmir Himalayas, India*. Pb U, Chandigarh. Prof. V.B. Bhanot and Dr. Ramesh K. Kakar.

Engineering & Technology

1. Chattopadhayay, Bhupal. *A study of combined forward and backward extension process*. U Delhi. Prof. Rajinish Prakash.

2. Mehrotra. Rakesh. *Treatment of waste water using fluidised bed systems*. U Delhi. Dr. A.F.S.A. Aowel.

3. Sarkar, A.K. *A set theoretic approach to error correcting codes*. U Delhi. Prof. A.K. Seth and Dr. B. Roy Choudhary.

4. Sharma, Shiva. *Human computer interface in logic programming environment*. U Delhi. Prof. D.N. Mishra and Dr. R. Sadananda.

BIOLOGICAL SCIENCES

Biochemistry

1. Dash, Debabrata. *Structure-function relationship in E. coli ribosomes*. BHU, Varanasi. Prof. (Mrs.) M. Chakravarti.

2. Deshpande, Kishore H. *Comparative study of lens enzyme and isoenzyme profiles in mammals*. Shivaji U, Kolhapur Dr. P.M. Bulakh.

Marine Biology

1. Geetha Nair, V. *Haematological studies in relation to parasitism in certain teleosts*. U Ker, Trivandrum. Dr. S. Radhakrishnan.

2. Lakshmi, P. *Haematological studies on certain teleosts*. U Ker, Trivandrum. Dr. S. Radhakrishnan.

3. Sreelatha, A. *Biology of certain fresh water catfishes of Kerala*. U Ker, Trivandrum. Dr. S. Radhakrishnan.

4. Vergis, Anita Lizbeth. *Comparative haematological studies on air breathing fishes*. U Ker, Trivandrum Dr. S. Radhakrishnan.

5. Vijayakumari, K.N. *Comparative haematological studies on cyprinids*. U Ker, Trivandrum. Dr. S. Radhakrishnan.

Botany

1. Amar Singh. *Leaf anatomical studies in grasses and its relation to systematics and photosynthetic pathways*. Pb U, Chandigarh. Dr. M.L. Sharma.

2. Babasaheb, Nalawade Bapurao. *Studies in physiology of an oilseed crop niger, Guizotia abyssinica cass*. Shivaji U, Kolhapur. Dr. P.D. Chavan.

3. Bawa, Rajan. *Structural and functional studies of three semi-grassland communities near Shimla*. HPU, Shimla. Dr. R.S. Thakur.

4. Chauhan, Ramesh Chand. *Hydrobiological studies of Renuka and Rewalsar lakes of Himachal Pradesh with special emphasis on productivity*. HPU, Shimla. Dr. R.S. Thakur.

5. Kapoor, Kulraj Singh. *Species composition, plant biomass and net primary production in certain grassland ecosystems of Shimla Hills*. HPU, Shimla. Dr. R.S. Thakur.

6. Mahajan, Indira. *Diel periodicity in phytoplankton and water quality with the evaluation of primary productivity in Renuka and Rewalsar lakes of Himachal Pradesh*. HPU, Shimla, Dr. R.S. Thakur.

7. Manmohan Krishan. *Studies on potato virus X (PVX) in potato tissue culture*. HPU Shimla. Dr. S.M. Khurana and Dr. T.N. Lakhanpal.

8. Panda, Minakshi Mani. *Plastid biogenesis in Cuscuta reflexa Roxb*. Sambalpur U. Dr. N.K. Chaudhury.

9. Pandey, Satya Narayan. *Mycology*. BHU, Varanasi. Prof. R.S. Dwivedi.

10. Rajendra Prasad. *Phycology*. BHU, Varanasi. Prof. Y.B.K. Chowdhury.

11. Sharma, Neelam. *Melissopalyonology and survey of honey plants in Himachal Pradesh*. HPU, Shimla. Dr. L.R. Verma and Dr. T.N. Lakhanpal.

12. Sharma, Girish. *Impact of littoral flora on Renuka and Rewalsar lakes of Himachal Pradesh*. HPU, Shimla. Dr. R.S. Thakur.

13. Sharma, Shashi. *Ecophysiology of seeds of certain Himalayan Shrub species*. HPU, Shimla. Dr. V.K. Rai.

14. Sharma, Manju. *Algae*. BHU, Varanasi. Prof. Y.B.K. Chowdhary.

15. Singh, Oinam Kumar. *Floristic study of Tamenglong District, Manipur*. Mani U, Imphal. Dr. S.C. Sinha.

16. Singh, Chongtham Rajendro. *Studies on the flora of Logtak Lake*. Mani U, Imphal. Dr. L. Janmejay Singh.

17. Sraswathy Amma, C.K. *Chemogenetic investigations on hevea*. U Ker, Trivandrum. Dr. C.A. Ninan and Dr. A.N. Namboodiri.

18. Sobita Devi, Thiyam. *The chromosomes of bamboo*. Mani U, Imphal. Dr. G. Jitendra Sharma.

19. Sreekumar, K.G. *Morphological, cytogenetic and phytochemical studies on some medicinal plants of Kerala*. U Ker, Trivandrum. Dr. C.A. Ninan and Dr. P. Gopinathan Nair.

20. Swain, Narendra Kumar. *Aging of cell free clorplasts: Stability of thylakoid and stroma proteins*. Sambalpur U. Dr. N.K. Choudhury.

21. Tomar, Chet Singh. *Influence of different levels of calcium on the growth and metabolic activities of apple seedings in solution culture*. HPU, Shimla. Dr. R.P. Awasthi and Dr. R.S. Thakur.

22. Vishnu Kant. *Light storage of seed potatoes: Hormonal changes and performance of cultivars differing in tuber dormancy*. HPU, Shimla. Dr. N.P. Sukumaran and Dr. V.K. Rai.

Zoology

1. Chauhan, Reeta. *Population dynamics of insects in the outskirts of Shimla with the help of light trap*. HPU, Shimla. Dr. R.S. Thakur.

2. Choudhary, Sangeeta. *Study of embryonic development of chromaffin tissue and carpuscles of stannius on taleost fish*. HS Gour, Sagar. Dr. D.K. Saraf.

3. Dutta, Prakash Chand. *Comparative morphometric and biochemical studies on flight muscles of genus apis and its role in apple pollination*. HPU, Shimla. Dr. L.R. Verma.

4. Guru, Sudhansu Sekhar. *Studies on plant litter decomposition and soil metabolism in a tropical forest soil of Orissa, India*. Sambalpur U. Dr. N. Behera.

5. Jain, Gopa. *Histological and histochemical studies on the ovaries of some fishes*. HS Gour, Sagar. Dr. (Mrs.) S. Sahai.

6. Mathur, Noopur. *Studies on some changes caused by nematode larvaeon insect Gryllodes sigillatus*. Pb U, Chandigarh. Prof. S. Khera.

7. Narayanan Nair, P. *Hormones and vitellogenin in the caster semilooper Achoea janatha Linn (Noctuidae, Lepidoptera)* U Ker, Trivandrum. Dr. D. Muraleedharan.

8. Pandia, Girish Chandra. *Ecology of shchytrasidae Oligo Chaeta: Taxonomy, distribution in some ecosystems of Orissa and their role in decomposition*. Sambalpur U. Dr. M.C. Dash.

9. Ramachandran, K.K. *Certain aspects of ecology and behaviour of the Malabar giant squirrel, Ratufa indica maxima*. U Ker, Trivandrum. Dr. M. Balakrishnan.

10. Raman Nair, S. *Endocrines and secretory rythem of carbohydrate digestion in some insect pests*. U Ker. Trivandrum. Dr. Muraleedharan.

11. Sarojnalini Devi, Ch. *Fishery : Studies on the biochemical composition and nutritive values of certain preserved and processed fishes of Manipur*. Mani U, Imphal. Dr. W. Vishwanath Singh.

12. Sasikumar, P.S. *Studies in the influence of bootic and abootic environmental factors on the earvae of Mansonia uniformis and M. Annulifera*. U Ker, Trivandrum. Dr. R.S. Prasad.

13. Shantibala Devi, Soibam. *A taxonomic study on the amphidophagus cocinellidae fauna (Coleptera insects) of Manipur and Nagaland.* Mani U, Imphal. Dr. T. Kameshwar Singh.

14. Sharma, Sushma Kumari. *Alterations in the lipid profile of chick skeletal muscle under stress conditions.* HPU, Shimla. Dr. R.K. Malhotra.

15. Sharma, Suman. *Modification of radiocalcium (45 Ca) induced histopathological changes in mice by 2-Mercaptopropoinylglycine (MPG).* HPU, Shimla. Dr. Ashok Kumar.

16. Sharma, Monoharmayum Gonchandra. *Ecobiology of hill streamfishes in Manipur.* Mani U, Imphal. Dr. H. Tombi Singh.

17. Singh. L. Nilamani. *Distributional pattern and taxonomic studies on major groups of cedidozoan insects in Manipur.* Mani U, Imphal. Dr. B. Prasad.

18. Singh, Oinam Lukhoi. *Comparative histomorphology and certain aspects of physiology of digestive tract of odophorus Longicullis eliu.* Mani U, Imphal. Dr. B. Prasad.

19. Sitaramaiah, K. *Endocrine influence of feeding in certain phytophagous insect pests.* U Ker, Trivandrum. Dr. Muraleedharan.

20. Tiku, Rajni. *Histological, histochemical and biochemical studies on frog gastrocnemius during its repair and regeneration.* HPU, Shimla. Dr. R.K. Malhotra.

21. Uma Devi, N. *Studies on sugarcane nematodes of (Manipur (entomology).* Mani U, Imphal. Dr. Ch. Dhanachand Singh.

22. Varghese, Abraham. *Endocrines and anti hormones in some lepidopteran insects.* U Ker, Trivandrum. Dr. Muraleedharan.

Medical Sciences

1. Mohamed Noorulla. *Neuroanatomy.* BHU, Varanasi. Prof. G.C. Sensharma.

2. Sasidharan Nair, K.S. *Study of myocardial infection.* U Ker, Trivandrum. Dr. G. Vijaraghavan.

3. Shukla, Shanteshwar Prasad. *Synthesis and biological activity of thiadiazole derivatives.* BHU, Varanasi. Dr. S.N. Pandey.

Agriculture

1. Misra, Saryoo Saran. *Studies on the control of green aphid, Myzus persicae Sulzer on potato crop with systematic insecticides and assessment of their residues in potatoes,* HPU, Shimla. Dr. H.O. Aggarwal and Dr. B.B. Nagaich.

2. Sangar, Ram Bahadur Singh. *Studies on the distribution of potato viruses X and Y in potatoes.* HPU, Shimla. Dr. H.O. Aggarwal and Dr. B.B. Nagaick.

THESES OF THE MONTH

A list of Doctoral Theses Accepted by Indian Universities

PHYSICAL SCIENCES

Mathematics

1. Bhattacharyya, Asutosh. *Studies on certain problems in magnetohydrodynamic flow.* Dibrugarh U.

2. Jai Prakash. *Metropolitan transportation planning: A goal programming approach* IIT, Kharagpur.

3. Misra, Maheshwar. *Some fluctuating flow problems in hydrodynamics and hydromagnetics.* Utkal U.

4. Ram Krishan. *Completely dominated spaces and cohomological dimension.* U Jammu.

5. Sekar, R. *Propagation and reflection of internal gravity waves in conducting fluids and in flow through porous Media.* Bangalore U.

Statistics

1. Kakati, Mohan Ch. *Interference theory and reliability.* Dibrugarh U.

Physics

1. Barik, Bijoy Kumar. *Theoretical studies on heavy quark systems.* Utkal U.

2. Bharathi, Gogineni. *A study of the electron density profiles and dynamical behaviour of the ionospheric F. Region over Waltair.* Andhra U.

3. Das, Binay Krishna. *Studies on some physical properties of jute obtained from plants at different stages of growth.* U Calcutta.

4. Deshpande, Achyut Purushottam. *X-ray spectroscopic study of some ternary compounds of copper.* Nagpur U.

5. Hom, Dipankar. *Investigations of some fundamental problems in non-relativistic quantum mechanism.* U. Calcutta.

6. Mahapatra, Durga Prasad. *Compton scattering study of electron momentum density of some solids.* Utkal U.

7. Majumdar, Brajagopal. *Some aspects of stellar neutrino emission in a strong magnetic field from the view point of the photon neutrino weak coupling theory.* U Calcutta.

8. Malakondaiah, K. *Application of ultrasonics to thermodynamic study of binary liquid mixtures.* SKU, Anantapur.

9. Mohanty, Sumitra. *Anisotropy of penetration depth in superconducting tin.* U Delhi.

10. Naik, Alekha Chandra. *Statistical theory of dense fluids.* Utkal U.

11. Raju, Dantulum Vijaya Narasimha. *Studies on photon attenuation coefficients in certain elements employing Mossbauer spectrometer.* Andhra U.

12. Sarkar, Susil Kumar. *Studies on the photoluminescence properties of some substituted benzene and pyridine molecules.* U Calcutta.

13. Sarma, Satyendra Nath. *Studies on non-linear waves in a magnetised plasma* . Dibrugarh U.

14. Sharma, Ghanshyam. *Quantum mechanical wave equations at high energy and applications.* RDV, Jabalpur.

15. Sharma, Ram Prakash. *Effect of temperature and illumination level on the performance of single crystal and polycrystalline silicon solar cells.* U Delhi.

16. Tayal, Dinesh Chandra. *Nuclear spectroscopy through colomb excitation with protons.* Pb U, Chandigarh.

17. Tewari, Arunkumar. *Study of mossbauer effect for a solid containing defects.* U Calcutta.

18. Vijaykumar, K.P. *Surface studies of some metallic thin films by optical methods.* U Cochin.

Chemistry

1. Chakravorti, Shyamapada. *Dynamics of phosphorus and potassium in flooded soils growing rice, Oryza sativa L.* Utkal U.

2. Chawda, A.C. *Studies on synthetic drugs.* Saur U, Rajkot.

3. Dhingra, Pritam Lal. *Chemistry of some aspects of imidobis, Sulfuryl fluoride.* Pb U, Chandigarh.

4. Gupta, Surinder Mohan. *A study of some reactions for the synthesis of chromones and flavonoids and isolation and characterisation of minor components of Gynandropsis gynandra.* U Delhi.

5. Jagath Reddy, G. *Synthesis and antifeedant activity of some heterocycles derived from 3-formylchromones.* OU, Hyderabad.

6. Jain, Satendra Kumar. *Study of stereochemistry and spin state of metal ion in transition metal complexes of biologically active thiosemicarbazones derived from 2-acetylpyridine.* U Delhi.

7. Jyotsna, D. *Chemical investigation of Premna tomentosa and synthesis of related oxygen heterocyclics of physiological interest.* OU, Hyderabad.

8. Khan, Saeed Ahmad. *Synthetic studies on prenylated and furane flavonoids.* U Delhi.

9. Maiti, Sanat Kumar. *Synthesis of ring systems related to terpenoids.* U Calcutta.

10. Mishra, Balram. *Metal complexes of methylmorpholine.* Mag U, Bodh Gaya.

11. Mishra, Pramod Kumar. *Nitrogen transformations in Sagar soils in presence of suitable fertilisers.* HS Gour, Sagar.

12. Panda, Ganeswar. *Kinetics of polymerization and inhibitation reactions.* Utkal U.

13. Patel, Ashokkumar Umakant. *Gresolfurfural resins, their characterisation and curing.* SPU, Vallabh Vidyanagar.

14. Pathak, Indradeo. *Redox processes in solution with special reference to potassium peroxo disulphate.* RDV, Jabalpur.

15. Ramabhadran, P. *Synthesis and reactions of flavazoles.* U Cochin.

16. Rawat, Govind Singh. *Chemical investigation of some common fodder grasses of the Bhabar Region of Garhwal.* RKU, Bareilly.

17. Sarkar, Nupur. *Structural investigations of plant polysaccharides.* U Calcutta.

18. Saxena, Vijay Kumar. *Synthesis of some new potential local anaesthesics.* RKU, Bareilly.

19. Saxena, Sushma. *Physico-chemical studies of some commercially important essential oils.* RKU, Bareilly.

20. Selvaraj, S. *Studies in alicyclic systems.* Madurai Kamaraj U.

21. Singh, Shashank Shekhar. *Metal complexes of triphenylphosphine selenide.* Mag U, Bodh Gaya.

22. Singhal, Rakesh Kumar. *Purification and characterisation of glutamate synthase* (*EC* 1-4-1-14) *from clostridium pasteurianum.* IIT, Delhi.

23. Venkataiah, S. *Rheological and thermochemical properties of substituted guar gum.* OU, Hyderabad.

24. Vyas, Ruplekha. *Coordination chemistry of alkali and alkaline earth cations : Study of newer ligands.* Devi Ahilya, Indore.

Earth Sciences

1. Bhattacharya, Swapan Kumar. *Geochemical and petrological aspects of spontaneous combustibility of selected Indian coals.* ISM, Dhanbad.

2. Dayashankar, P. *Geology, groundwater conditions, development and management in parts of Medchal Taluk. Rangareddy District, Andhra Pradesh.* OU, Hyderabad.

3. Hegde, Venkatraman Narashina. *Geology of the Gangavati Kamalapuram Area, Raichur Bellary District, Karnatak State.* Kar U, Dharwad.

4. Muraleedharan, P.M. *Studies on equatorial undercurrent in the Indian Ocean.* U Cochin.

5. Pandya, Krishnalal. *Lithostratigraphy and sedimentation history of a part of Talchir group, Talchir Gandwana Basin, Orissa, India.* Utkal U.

6. Ramachandran, Chilukuri. *Studies on seismic wave propagation characteristics in some lower Gondwana formation and their relation to other rock properties* ISM, Dhanbad.

7. Ramakrishna Prasad, K. *Sedimentary analysis of lower Gondwana formations of South Godavari coalfield, Khammam District, A.P.* OU, Hyderabad.

8. Sarkar, Depankar. *Studies on intensity and amplitude attenuation and source parameter estimation.* ISM, Dhanbad.

9. Sarvothaman, H. *The archaean granite complex of the Medak Area, A.P.* OU, Hyderabad.

10. Sathyanarayana Murthy, A. *Studies on storm surges and sea level variations along the east coast of India.* U Cochin.

11. Subba Rao, Manchiraju. *Summer monsoon activity over India in relation to regional and long and short period circulation anomalies.* Andhra U, Waltair.

12. Talat Ahmad. *Geochemistry of Basal Aravalli mafic metavolcanics of Nathdwara, Rajasthan.* JNU, New Delhi.

13. Upadhyay, Bidur Prasad. *Water balance of Nepal with special reference to water resources and agriculture development.* Andhra U, Waltair.

Engineering & Technology

1. Agarwal, Ajay Kumar. *Black molybdenum and cobalt oxide solar selective absorbers for photothermal conversion of solar energy.* U Delhi.

2. Kulkarni, Ajit R. *Lithium ion conducting glassy solid electrolytes in the* $liF\text{-}Fi_2 O.AL (PO_3)_3$*system.* IIT, Kharagpur.

3. Kumar, Sundaram Nand. *Electroless deposited blacks and metal pigmented anodized aluminium as solar selective coatings.* IIT, Delhi.

4. Purwar, Sata Nand. *Investigations on the properties and structure of poly-propylene styrene-b-ethylene-co-butylene-b-styrene triblock copolymer blends.* IIT, Delhi.

5. Rajendra Prasad. *Some decentralized estimation and control schemes, with application to power systems.* IIT, Delhi.

6. Singh, V.D. *Development of integrated flowsheet for beneficiation of Indian cooking coal in future.* ISM, Dhanbad.

7. Thakur, Shubha Sunil. *Physico-chemical studies of metal complexes of ortho substituted 1-nephthols and alkyl substituted ethylene diamines.* MSU, Baroda.

8. Yadwadkar. Shashikala Sadanand. *Design and synthesis of new mesogens and study of their characteristics and applicability.* MSU, Baroda.

Telegrams: 'SRISIT'

Telephone: 8314, 8703

SRI SIDDHARTHA INSTITUTE OF TECHNOLOGY

MARALUR, TUMKUR — 572105, KARNATAKA
(Affiliated to Bangalore University)

ADMISSION NOTICE

Applications are invited for admission to 1 BE in Civil, Mechanical, Electrical, Electronics and Industrial Production Engineering during 1985-86 at Sri Siddhartha Institute of Technology, Tumkur.

Eligibility required for admission is 50% minimum marks in Physics/Chemistry/Mathematics in Intermediate Science/P.U.C./Pre-Degree/10+2 pattern or any other equivalent qualification.

Application forms and prospectus may be obtained from the Principal on payment of Rs. 25.00 (Rs. Twenty five only) by Crossed Indian Postal Order or Crossed Demand Draft in favour of Principal.

For further details contact the Secretary or Administrative Officer, S.S.I.T., Tumkur.

Hostel facilities are available for boys and girls.

Hon. Secretary
SRI SIDDHARTHA INSTITUTE OF TECHNOLOGY
Kunigal Road, Maralur,
Tumkur-572 105

ALIGARH MUSLIM UNIVERSITY

ALIGARH-202 001

ADMISSION NOTICE NO. VI

SESSION — 1985-86

Applications on prescribed forms are invited from eligible candidates for admission to the following courses for the session 1985-86. The last date for receipt of completed application forms in the Admission Office of the University and Cost of Application forms are mentioned against each course.

S. No.	Name of the Course	Last date for receipt of Applications	Cost of Application forms
1.	B.A. (Hons.)/B.Sc. (Hons.)/B.Com. (Hons.) Part-I of the three-year degree course in the Faculties of Arts, Social Sciences, Science and Commerce.	20-7-1985	Rs. 12 (including registration fee for upto two combinations)
2.	Diploma Courses in Women's Polytechnic (i) Electronics Engg. (ii) Electronics Engg. (T.V. Technology) (iii) Costume Design & Dress Making (iv) Office Assistantship & Sercetarial Practice	15-7-1985	Rs. 3/-
3.	Certificate in Draftsmanship (Civil/Mechanical)	15-7-1985	Rs. 3/-
4.	Diploma in Drafting and Designing (Civil/Mechanical)	10-7-1985	Rs.3/-
5.	Diploma of Teaching in Urdu	15-7-1985	Rs. 3/-
6.	Certificate in Urdu Calligraphy	6-8-1985	Rs. 3/-
7.	Diploma in Steno-typing	15-7-1985	Rs. 3/-
8.	M.A./M.Sc./M.Com./M.Sc. (Agriculture) (i) Plant Pathology (ii) Entomology (iii) Nematology (iv) Microbiology	10-8-1985	Rs. 12/- (including registration fee for upto two combinations)
9.	LL.B./LL.M.	10-8-1985	
10.	Bachelor of Theology (B. Th.)/Master of Theology (M. Th.)	10-8-1985	Rs. 12/- (including registration fee for upto two combinations)
11.	Diploma in Bank Administration (D.B.A.)	10-8-1985	
12.	Diploma in Secretarial Works (D.S.W.)	10-8-1985	
13.	Diploma in Professional Courses (a) Electronics Data Processing & Machine Operation (b) Museology (c) Pest Management (d) Company Law, Banking and Insurance (e) Labour Law and Labour Relations (f) Criminology and Criminal Administration (g) Laboratory Technology (Physical & Chemical) (h) Gem Testing and Art of Lapidary (i) Medical Lab. Technology (Radiology) (j) Journalism (k) Applied Art (l) Instrument Technology (m) Medical Lab. Technology (Clinical Pathology) (n) Cartography (o) Orthoptics (p) Pissiculture	10-8-1985	
14.	M.Sc. Engg. (Civil, Electrical & Mechanical)	25-6-1985	Rs. 3/-
15.	P.G. Diploma in Petroleum Processing	25-6-1985	Rs. 3/-
16.	M. Tech. (Computer Science & Technology) Course	25-6-1985	Rs. 3/-

Full details regarding the courses, eligibility requirements, rules for sending application etc. are given in the Guide to Admission, No. 2. Application forms and Guide to Admission can be obtained on requisition addressed to the Assistant Registrar (Admissions), Post Box No. 52, Aligarh Muslim University, Aligarh on payment of required fees as noted against each course in cash or through a crossed Indian Postal Order drawn in favour of the Finance Officer, A.M.U. Aligarh.

Candidates desirous of getting application forms by post should send a self-addressed envelope of 9″×6″ size affixing stamps worth Rs. 2.50. In case the application forms are desired to be sent by Registered Post, stamps worth Rs. 5.25 should be affixed on the self-addressed envelope.

Application forms of all external male candidates and women candidates other than those mentioned below, complete in all respects along with prescribed registration fee should reach the Assistant Registrar (Admissions), Post Box No. 52, Aligarh Muslim University, Aligarh-202001 by 5.00 P.M. on the last date mentioned against the concerned course. Applications of internal candidates should be submitted to the concerned Provosts at least 2 days before the last date of receipt of applications in Admission Office.

Application forms of women candidates for admissions to B.A. (Hons.) (Arts and Social Sciences) and B.Sc. (Hons.) courses should be sent to the Principal, Women's College, Aligarh Muslim University, Aligarh directly alongwith application fee so as to reach the Office of the Principal by the specified date.

Applications for admission to Diploma Courses in Women's Polytechnic should reach the Principal, University, Women's Polytechnic, Aligarh Muslim University, Aligarh alongwith the registration fee by the specified date.

Incomplete applications or applications received late will not be accepted and no further correspondence will be entertained regarding such applications.

N. Moideen
CONTROLLER OF EXAMS. & ADMISSIONS

PHYSICAL RESEARCH LABORATORY

NAVRANGPURA, AHMEDABAD-380009

The Physical Research Laboratory makes four awards called Shri Hari Om Ashram Prerit Dr. Vikram Sarabhai Research Awards, every two years from funds kindly donated by Pujya Shri Mota of Hari Om Ashram of Nadiad. Each award carries a medal and a cash prize of Rs. 8,000/-. These awards will be made to Indian Scientists, who are not above 45 years of age, on 1st January 1985 for original work in the following fields :

(1) Electronics and Telecommunications
(2) Planetary and Space Sciences
(3) Atmospheric Physics and Hydrology
(4) Systems Analysis or Management

Although the overall work of the candidates would be taken into account, the work done in India would be given primary consideration.

The candidates should have to his credit at least one or more of the following achievements:

(1) Significant achievement in scientific research.
(2) Important and successful adaptation of new technology.
(3) Planning, development and implementation of systems in the context of science and technology.

The selections for the year 1985 will be completed by December 1985 and the awards presented on 12th August, 1986.

The last date for receiving nominations is August 31, 1985. Candidates themselves or the sponsors are requested to send a two page note (12 copies) summarising the contributions and achievements of the candidate together with his/her bio-data in a cover marked confidential, addressed to the Director, Physical Research Laboratory, Navrangpura, Ahmedabad-380009. Proposals made for the year of the award would only be considered.

More detailed information will be asked for by the Selection Committee, if considered necessary.

UNIVERSITY OF DELHI

Advertisement No. Estab. IV/101/85 **Dated : 1-6-1985**

Departments	Designation	
1. Arabic	: One Professor	
2. Buddhist Studies	: One Lecturer in Tibetan	
3. English	: One Reader	
4. Modern Indian Language	: (i) Two Readers (One each in Tamil & Punjabi) : (ii) Two Lecturers (One each in Oriya & Manipuri)	
5. Economics	: Three Readers	
6. Geology	: One Reader	
7. Mathematics	: Two Readers (One for South Campus)	
8. Mathematical Statistics	: One Lecturer	
9. Computer Science	: One Reader	
10. Campus Law Centre	: One Lecturer	
11. Law Centre-II	: Four Part Time Lecturers.	
12. Central Office	: One Controller of Examinations	
13. Delhi University Library System	: Two Professional Juniors.	
14. Physics & Astrophysics	: (*) One Laboratory Attendant (Reserved for Ex-serviceman)	
15. Central Office	: One Driver (Reserved for Scheduled Tribe Category)	Candidates of General Category may also apply. However, their candidature would be considered only if no candidate from the reserved category is found suitable
16. Engineering Department	: (*) (i) One Draftsman Gr. I (Reserved for Scheduled Caste Category) : (*) (ii) One Draftsman Gr. II (Reserved for Scheduled Caste Category)	
17. Botany	: (*) (i) Two Technical Asstts. (One Reserved for Scheduled Tribe) : (*) (ii) One Laboratory Attendant (Reserved for Ex-serviceman)	
18. University Services and Instrumentation Centre:	: (*) One Technician 'B' (Glass Blowing)	
19. Electronic Science	: One Sr. Technical Asstt. (for Microprocessor)	

Scale of Pay of the Posts are:

Professor/Controller of Exams : Rs. 1500-60-1800-100-2000-125/2-2500.

Reader : Rs. 1200-50-1300-60-1900.

Lecturers/Professional Juniors : Rs. 700-40-1100-50-1600.

Part Time Lecturers : Rs. 500/- p.m. (Fixed) for work load ranging from 3 to 6 hours per week.

Rs. 750/- p.m. (Fixed) for work load ranging from 7 to 10 hours per week.

Sr. Technical Asstt. : Rs. 550-25-750 EB-900.

Draftsman Gr. I : Rs. 550-20-650-25-750.

Draftsman Gr. II/Technical Asstt. : Rs. 425-15-500-EB-15-560-20-700.

Technician 'B' : Rs. 320-8-400-10-450.

Driver : Rs. 260-6-290-EB-6-326-8-366-EB-8-390-10-400.

Laboratory Attendant : Rs. 210-4-250-EB-5-270.

Essential Qualifications for ;

Professorships

An eminent scholar with published work of high quality actively engaged in research. Ten years' experience of teaching and/or research. Experience of guiding research at doctoral level.

OR

An outstanding scholar with established reputation who has made significant contribution to knowledge.

Readerships

Good academic record with at least second class Master's degree in a relevant subject with a doctoral degree or equivalent published work. Evidence of being actively engaged in (i) research, or (ii) innovation in teaching methods or (iii) production of teaching materials.

Five years' experience of teaching in under-graduate/post-graduate classes and/or post-doctoral research work with evidence of published work.

Note : Second Class would mean at least 50% marks in the subject or equivalent grade.

Lecturerships (Other than Lecturership and Part Time Lecturership in Law) :

(a) A Doctorate's degree or research work of an equally high standard; and

(b) Good academic record with atleast second class (C in the seven point scale) Master's degree in a relevant subject from an Indian University or an equivalent degree from a foreign University.

Having regard to the need for developing interdisciplinary programmes, the degree in (a) and (b) above may be in relevant subjects.

Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may relax the requirement of at least second class in Master's degree examination in terms. of level achieved at the said examination as prescribed in (b) above.

Provided further that if a candidate possessing a Doctor's degree or equivalent research work is not available or is not considered suitable, a person possessing a good academic record (weightage being given to M.Phil or equivalent degree or research work of quality) may be appointed, on the condition that he will have to obtain a Doctor's/M.Phil. degree or give evidence of research of high standard within eight years of his appointment, failing which he will not be able to earn future increment until he fulfils the requirements.

Explanation

1. For determining "good academic record" the following criteria shall be adopted.

(i) A candidate holding a Ph.D/M.Phil. degree should possess at least a second class Master's degree; or

(ii) A candidate without a Ph.D./M.Phil. degree should possess a high second class Master's degree and second class in the Bechelor's degree; or

(iii) A candidate not possessing Ph.D/M.Phil degree but possessing second class Master's degree should have obtained first class in the Bachelor's degree.

2. Persons having secured atleast 55% or more marks shall be deemed to have passed the examination in the high second class.

Lecturership in Law

Good academic record with atleast second class (C in the seven point scale) Master's degree in Law from an Indian University with relevant specialization or equivalent degree from a foreign University.

Part-time Lecturership in Law

Must be enrolled as an advocate of a High Court and should have actually practiced at the bar for not less than five years.

Controller of Examinations

(a) At least 15 years of experience as Lecturer & Reader, of which 5 years should be as Reader with experience in educational administration with specific reference to the work related to examinations.

(b) Persons with comparable qualifications in establishment/institutions dealing with higher education & having experience of examination work, are also eligible.

(c) Persons with 10 years of administrative experience, with particular reference to the work of the examination; and, who have qualifications comparable to those required for appointment to the post of a Reader may also be considered.

In addition to above [(a) or (b) or (c)] the candidate should have knowledge or acquaintance with Computer Programming and experience of working in an Institution where examination results are computerised.

Professional Junior

(i) Good academic record with atleast a high second class Master's degree in a subject other than Library Science.

(ii) Master's degree in Library Science with first or high second class.

Draftsman Grade-I

Matric with Diploma in Draftsmanship (Civil) from a recognised Institution, 8 years experience as Draftsman.

Note : Experience can be relaxed for candidates having outstanding merits/records.

Draftsman Grade-II

Matric with Diploma in Draftsmanship (Civil) from a recognised Institution with three years experience as Draftsman.

Technical Assistant

Graduate in Science. Experience in Lab. Techniques of subject (Botany).

Technician 'B' (Glass Blowing)

Matric with 2 years experience in glass blowing workshop. The candidate should have handled various glass blowing equipments.

Driver

Should have a valid licence as driver, professional skill in driving, motor mechanics and general smartness with polite manners.

Laboratory Attendant

Should have passed Matriculation or an equivalent examination with Science subject.

Senior Technical Assistant

1. Post-graduate degree in any Social Science with Statistics/Quantitative Methods as part of the curricular programme.
2. Adequate knowledge of Data Processing in Forton IV and familiarity with other softwares like DBASE or GRAPHIC.
3. At least one year's experience of working on and maintaining a Micro Processor.
4. Familiarity with and some experience of Word Processing.

Special/Desirable Qualifications

Professorship in Arabic

Special : Experience of teaching modern Arabic (at least 7 years).

Desirable : Published works of high standard.

Lecturership in Tibetan

1. The candidate should possess good knowledge of Tibetan language and literature.
2. The candidate should have knowledge of Buddhist Sanskrit/Pali/Buddhist Philosophy/Buddhist History.

Readership in Tamil

Specialisation in Modern Literature.

Lecturerships in Oriya and Manipuri

Knowledge of language teaching techniques.

Readership in Geology

Specialisation in one or more of the following:
Seismotectonics, Geoexploration, Mineral Fuels, Engineering Geology.

Readership in Mathematics (S.D.C. Post)

Fluid Dynamics/Differential Equations.

Readership in Computer Science

Computer System Modelling and Performance Evaluation/Software Engineering/Artificial Intelligence and knowledge based system/Pattern Recognition/Digital Image Processing/Micro-Computer Architecture and Applications/Computer Graphics.

Professional Junior (Ist Post)

M.A. (Social Work)

Driver

A pass in middle school standard.

Laboratory Attendants

Should have worked in a Laboratory.

The prescribed application forms can be had from the Information Section of the University either personally or by sending a self-addressed envelope (size 13cm × 28cm) with postage stamps worth **Rs. 3.45 p.**

The candidates will have to produce the original documents relating to their age, qualifications, experience etc. at the time of interview.

Applications (separate for each post) accompanied by attested copies of Degrees, other certificates, marksheets, published research articles etc. should be addressed to the Registrar. However, applications for the posts marked asterrisk (*) should be sent directly to the Head of the Department concerned. The last date prescribed for receipt of applications is **29-6-1985.**

Note

1. It will be open to the University to consider the names of suitable candidates for teaching posts who may not have applied. Relaxation of any of the qualifications may be made in exceptional cases, in respect of all the posts on the recommendations of the Selection Committee.
2. Canvassing in any form by or on behalf of the candidate will disqualify.
3. Candidates for teaching posts only from outside Delhi, when called for interview will be paid to and fro single second class rail fare.
4. The University reserves the right not to fill up any of the vacancies advertised if the circumstances so warrant.

Madan Mohan
REGISTRAR

JAWAHARLAL NEHRU UNIVERSITY
NEW DELHI-110067

Advt. No. Aca. III/7/85

Applications are invited for the post of Programmer in the pay scale of Rs. 700-40-1100-50-1600 in the Centre for the study of Regional Development School of Social Sciences.

The post is reserved for Scheduled Caste candidate. However, general candidates would also be eligible to apply but they would be considered only if no suitable scheduled caste candidate is available for appointment.

Essential Qualifications

(i) Consistently good academic record with at least a high 2nd class Master's degree in Mathematics, Statistics, Operation research, Computer Sciences or any other related discipline or an equivalent qualification from an Indian/Foreign University.

(ii) Knowledge of one of the high level languages like Fortan, Cobol or Algol and familiarity with software packages for data management like DBASE II.

(iii) At least three years experience of Computer Programming in the field of socio-economic research.

Desirable

Supervisory experience in looking after small electronics data processing unit.

Benefit of CPF or G.P. Fund-cum-Pension-cum-Gratuity/CGHS are available as per University rules.

Persons already in employment should route their applications through proper channel.

Second Class (mail) railfare (both ways) by the shortest route will be paid to candidates invited to appear for Interview from outstations.

Application on the prescribed form, obtainable free of cost from the Section Officer (Aca. & Estt-II) of the University by sending him a self addressed stamped envelope (affixing Postage stamps worth Rs. 3.45) of 23cm x 10cm size should reach the Assistant Registrar (Aca. & Estt) latest by **July 10, 1985.**

REGISTRAR

PUNJABI UNIVERSITY
PATIALA

Advertisement No. 11/APIS/
Recruitment/June, 1985

Applications are invited for the following posts:

1. **Professor** : (One in the Department of Defence Studies)

(Grade : Rs. 1500-60-1800-100-2000-125/2-2500)

Qualifications

An eminent scholar with published work of high quality actively engaged in research. About ten years' experience of teaching and/or research. Experience of guiding research at doctoral level.

OR

An outstanding scholar with established reputation who has made significant contribution to knowledge.

2. **Readers** : (One each in the Department of Astronomy & Space Science, Guru Granth Sahib Studies, Music and three in Business Management).

(Grade : Rs. 1200-50-1300-60-1900)

Qualifications

Good academic record with a doctoral degree or equivalent published work. Evidence of being actively engaged in (i) research or (ii) innovation in teaching mathods or (iii) production of teaching materials.

About five years' experience of teaching and/or research provided that at least three of these years were as Lecturer or in an equivalent position.

This condition may be relaxed in the case of candidates with outstanding record of Teaching/Research.

Specialisations

Reader in Astronomy & Space Science

1. Optical/IR Astronomy: Observing experience on medium size telescopes and able to teach astronomical techniques including the modern systems of detection and image processing.
2. Stellar atmospheres.
3. Solar Physics (Observational/theory)
4. Stellar evolution/high energy astrophysics.

Note

In case no suitable person is available, the Selection Committee can recommend any person for appointment as Lecturer.

Readers in the Department of Business Management

Candidates may have specialisation in any functional area of management.

Note

Those who had applied earlier need not apply again.

3. **Lecturers** : (One each in the Departments of Education, Arabic, Defence Studies, English and Two in Astronomy & Space Science)

(Grade : Rs. 700-40-1100-50-1600).

Qualifications

(a) A Doctorate's degree or research work of an equally high standard; and

(b) *Good academic record with atleast second class (C in the seven point scale) Master's degree in a relevant subject from an Indian University or an equivalent degree from a foreign university.

Having regard to the need for developing inter-disciplinary programmes, the degrees in (a) and (b) above may be in relevant subjects.

Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may relax any of the qualifications prescribed in (b) above.

Provided further that if a candidate possessing a Doctor's degree or equivalent research work is not available or is not considered suitable, a person possessing a good academic record (weightage being given to M.Phil.) or equivalent degree or research work of quality) may be appointed provided he has done research work for atleast two years or has practical experience in a research laboratory/organisation on the condition that he will have to obtain a Doctor's degree or give evidence of research of high standard within eight years of his appointment, failing which he will not be able to earn future increments until he fulfils these requirements.

Note

1. For the post of LECTURER IN EDUCATION, the Doctor's degree must be in Education and following are the alternative qualifications:

"(a) A Doctor's degree in any university discipline or research work of an equally high standard; and

(b) Good academic record with an M.Phil. degree in Education (which may be acquired while in service) from an Indian University or an equivalent degree from a foreign university.

Having regard to the need for developing inter-disciplinary programmes, one of the degrees in (a) and (b) above may be in relevant subjects, the other being in Education.

2. For the post of LECTURER IN ENGLISH the words, "or has practical experience in a research laboratory/organisation" appearing in the last paragraph shall not be applicable.

3. For the post of LECTURER IN ARABIC the last paragraph be read as under:

"Provided further that if a candidate possessing a Doctor's degree or equivalent research work is not available or is not considered suitable, a person possessing a good academic record may be appointed provided he has done one year post M.A. diploma course in the teaching of foreign language concerned from a university on the condition that he will have to obtain a Doctor's degree or give evidence of research work of equivalent high standard within eight years of his appointment failing which he will not be able to earn future increments until he fulfils these requirements."

Specialisations

Lecturer in Education

1. Teaching of Language
2. Economics of Education
3. At least 5 years experience of teaching in a School/College.

Lecturer in Astronomy & Space Science

Post-graduate Diploma in Astronomy/Space Sciences for those who have master degree in physics/mathematics and have specialised in one of the following:

1. Optical/IR Astronomy : Observing experience on medium size telescopes and able to teach astronomical techniques including the modern systems of detection and image processing.
2. Stellar Atmospheres.
3. Planetary and Space Physics.

Lecturer in Arabic

Candidate should be M.A. (Arabic) Ist class/High Second Class (B+) with M.Phil/M.Litt/Ph.D. Degree or should have published work of high standard. He must have atleast 3 years' teaching experience to Arabic classes. Preference will be given to candidates having qualifications in Persian.

Lecturer in English

Victorian Poetry.

3. (a) **Lecturer in Business Management** : One (Grade : Rs. 700-40-1100-50-1600).

Qualifications

A Master's degree in Business Administration or M.Tech. in Engineering with first class with the provision that the incumbent would acquire a doctorate degree within a period of eight years.

In the case of allied subjects, like Industrial Psychology, Personnel Management, Business Statistics, Cost Accountancy etc., where Lecturers are required to be recruited with qualifications other than MBA or M.Tech., the minimum qualifications shall be the same as for Lecturers mentioned at Sr. No. 3.

Specialisations

Preferably in the background in Managerial Economics

4. **Case Analyst** : (Department of

Business Management): One Research, non-vocational post)

(Grade : Rs. 700-40-1100-50-1600)

Qualifications

M.B.A. in Ist Division from any University or Institute recognised by the University;

OR

M. Tech. in Ist Division from any University or Institute recognised by the University;

OR

M.Com. with Ph.D. (In case candidates with Ph.D. are not available, candidates without Ph.D. may also be considered provided they have atleast two years of research experience).

Note

Other terms and conditions, as mentioned at Sr.No.3 above under the heading "Lecturer" for various posts, will be applicable.

5. Research Associate: (Directorate of Nuclear Science Lab.) One @ Rs. 700/- p.m. fixed for a period of 2 years.

Qualifications

Candidate should be first class M.Sc. (Physics/Applied Physics). Preference will be given to those holding M.Phil. degree.

6. Research Scholars : (Two in the Department of Economics & one each in the Departments of Sanskrit, Religious Studies, Library & Information Centre)

(Tenable for two years in the first instance. @ Rs. 600/- p.m. fixed).

Qualifications

Research Scholarship/Junior Fellowship is open to persons preferably below the age of 30 years, who have obtained a Master's degree of a recognised University in the first or high second division (with at least 55% marks or B+ in the seven point grade system).

7. University Junior Research Fellow in the Department of Botany : One

(@ Rs. 600/-p.m. fixed)

Qualifications

Same as for the post mentioned at Sr. No. 6.

8. Junior Research Fellow in the Department of Hindi under the UGC Project "Transliteration and editing of Old Manuscripts" : One

(@ Rs. 600/- p.m. fixed)

Qualifications

Same as for the post mentioned at Sr. No. 6. In addition, the candidate should have sound knowledge of Punjabi.

9. Steno-Typists

(Grade: Rs. 400-10-450/15-525/15-600+Rs. 25/- as Spl. Pay)

25% posts are reserved for members of Scheduled Caste/Tribes and 5% for Backward Classes.

Qualifications

Candidates should have passed Matriculation/Higher Secondary Examination in second division with a minimum speed of 80 w.p.m. in short hand in Punjabi/English with a typing speed of 40 w.p.m. in Punjabi/English respectively and should be able to transcribe the matter on typewriter at the speed of 15 w.p.m.

Candidates with 3rd division in Matriculation/Higher Secondary Examination with atleast two years experience as Clerk/Stenotypist and exceptionally good in shorthand typewriting could also be considered. Candidates must have passed Punjabi as one of the subjects in Matric/Higher Secondary.

Candidates with Ist division in Matric/Higher Secondary Examination and graduate with experience in Government/University Office and those who qualify shorthand in both the languages will be given preference. Higher starting salary in the pay-scale is admissible to experienced and competent persons with outstanding merit. Those who will qualify the shorthand test in 2nd language i.e. English or Punjabi as the case may be, at a speed of 55-60 w.p.m. will be given one advance increment.

10. Tabla Instructor in the Department of Music : One

(Grade : Rs. 700-25-850/-30-1000/40-1200).

Qualifications

M.A. (Music) Instrumental (Sitar) with B.A. (Tabla) as an elective subject

OR

Sangeet Parveen from Prayag Sangeet Samiti, Allahabad; and with a minimum experience of three years.

11. Tabla Player in the Department of Music : One

(Grade : Rs. 510-15-600/20-700/25-850-30-940).

Qualifications

B.A. with Tabla as an Elective Subject;

OR

Sangeet Visharad

OR

Sangeet Parbhakar

OR

Sàngeet Praveen

and with a minimum experience of three years.

12. Binders : (Three in the University Library and One in the Directorate of Correspondence Courses).

(Grade: Rs. 400-10-450/15-525/15-600)

Qualifications

Matric with 7 years experience as Binder in a good Binding House and knowledge of different types of binding.

13. Groundman in the Department of C.S.O. : One

(Grade : Rs. 300-5-325/5-350/10-430)

Qualifications

Should be able to read and write Punjabi.

Age : Between 18 to 32 years.

(A person with good health and having experience of working as groundman will be preferred.)

14. Peons

(Grade : Rs. 300-5-325/5-350/10-430)

Qualifications

Candidate should be Middle Pass.

Note

For the post of Readers & Lecturers, Good academic record will be determined as under:—

(i) A candidate holding a Ph.D. degree should possess atleast a second class Master's degree, or

(ii) A candidate without Ph.D., degree should possess a high second class Master's degree and second class in the Bachelor's degree, or

(iii) A candidate not possessing Ph.D. degree but possessing second class Master's degree should have obtained first class in the Bachelor's degree.

General

Candidates for teaching & research posts should possess working knowledge of Punjabi upto Punjabi Parveshka standard. Persons from outside Punjab could however be considered for appointment but they will be required to give an undertaking in writing that they will acquire the requisite qualifications in Punjabi within a period of two years.

Higher start within the grade admissible depending upon the ability and experience of the candidate. House rent and Dearness allowance, Provident Fund and Medical facilities according to University rules.

Applications complete in all respects on the prescribed form accompanied by a crossed Postal Order worth Rs. 5/- (Rs. 2/- for candidates belonging to Scheduled Castes/Tribes & Backward Classes) drawn in favour of the Registrar, Punjabi University, Patiala, should reach the University by **15-7-1985.** The forms can be had from the Production & Sales Officer, Publication Bureau, Punjabi University, Patiala on payment of Re. 1/- by sending a crossed Indian Postal Order drawn in favour of the Registrar, Punjabi University, Patiala alongwith a self addressed envelope of the size of 25x10cms. stamped with Rs. 1.70 postage which should be superscribed at the top in bold letters REQUEST FOR APPLICATION FORM FOR THE POST OF———.

Persons already in service should apply through proper channel. Those who are not in a position to submit their applications through proper channel before the due date should submit an advance copy before the due date and regular applications through proper channel by **17-7-1985.**

D.S. Kang
REGISTRAR

THE MAHARAJA SAYAJIRAO UNIVERSITY OF BARODA

VADODARA-390002

Notification No. 2

Dated : 31st May, 1985

Applications are invited for the following posts under the Faculty of Science for the Training Programme of Bio Technology Course, sanctioned by the University Grants Commission.

The prescribed forms will be available upto 29-6-85 alongwith the details of qualifications from the Office of the Registrar, on pre-payment of Crossed Indian Postal Order of Rs. 2.00 (Re. 00.50 np. for members of SC/ST) payable to the Registrar, M.S. University of Baroda alongwith a self-addressed envelope of 30cms x 12cms for each post. The form will be available in person during working days between 11.30 a.m. and 2.00 p.m.

The applicant at the time of requesting for the prescribed form/s should mention very specifically the Post Number for which the forms are required. The SC/ST applicants will attach a Certificate to that effect.

Professors of

(1) Bio-Physics; (2) Molecular Biology; (3) Genetic Engineering; (4) Bio-Chemical Engineering; and (5) Immunology.

Scale of Pay : Professor

Rs. 1500-60-1800-100-2000-125/2-2500.

In case no candidate is found suitable for Professorship, a Reader in the scale of Rs. 1200-1900 will be considered provided he has research experience in the required field.

All the posts are, at present, **temporary** for a period upto 31st March, 1990 but they are likely to be made permanent.

The Application Form duly completed in all respects be sent to the Registrar, M.S. University of Baroda, Vadodara-390002, alongwith a Crossed Indian Postal Order for Rs. 10.00 (Rs. 2.50 ps for SC/ST applicant) payable to the Registrar, M.S. University of Baroda on or before **10-7-85.**

An eminent scholar with published work of high quality actively engaged in research. Ten years experience of teaching and/or research. Experience of guiding research at doctoral level.

OR

An outstanding scholar with established reputation who has made significant contribution to knowledge.

Name of the post & Specialization requirement

1. **Professor Bio-Physics**

Ten years experience in teaching and or research in one of the areas of biological sciences and should have published research papers in the field of biophysics.

2. **Professor of Molecular Biology**

Ten years experience in teaching and or research in one of the areas of biological sciences and should have published research papers in the field of Molecular biology.

3. **Professor of Genetics Engineering**

Ten years experience in teaching and or research in one of the areas of biological sciences and should have published research papers in the field of genetic engineering.

4. **Professor of Biochemical Engineering**

Ten years experience in teaching and or research in one of the areas of biological sciences and should have published research papers in the field of biochemical engineering.

5. **Professor of Immunology**

Ten years experience in teaching and or research in one of the areas of biological sciences and should have published research papers in the field of Immunology.

***(Note)** : In case, no candidate is found suitable for Professorship, Reader in the scale of Rs. 1200-50-1300-60-1600-Assessment-60-1900 will be considered provided he has research experience in the required field).

General Instructions

1. The University reserves the right to fill or not to fill any post or to alter the number of posts in any cadre or subject.
2. Selected candidates may be posted in any Institution of the University.
3. Candidates desiring to apply for more than one post must send separate application for each post.
4. The candidates when finally appointed on the posts concerned shall have also to clear the Gujarati Proficiency Test.
5. The permanent posts carry D.A., H.R.A. and benefit of Pension Scheme as per University Rules. **The temporary posts carry the D.A., H.R.A. as per University Rules.**
6. Candidates already in employment in Universities, Educational Institutions, Governments Establishments/Organizations should send their applications through their present employers on or before the prescribed date. They may however send an advance copy which must be received in the University Office on or before due date along with required fees.
7. Candidates must enclose the attested copies of all Marksheets i.e. Higher Secondary/Pre-University/Intermediate/First Year of Three Years Degree Course/Bachelor's Degree/Master's Degree. In absence of the attested copies of Marksheets, applications will be considered incomplete and the applicants may not be called for interview.
8. While filling up the details under Col. No. 11 of the Form, the candidate must state percentage of marks, division/grade and the subject taken at various examinations. **Specialization of the subject must be mentioned.**
9. Candidates if called for interview, will have to appear before the Selection Committee **at their own expenses.**
10. Incomplete applications, or those received late or on plain papers or those not accompanied by Crossed Postal Order of Rs. 10.00 (SC/ST Candidate Rs. 2.50) for the post of Professor will not be considered. The application fee once remitted is non-refundable.
11. A salary certificate showing Pay + DA and other allowances being paid by their Institution/Office/Firm should be enclosed with the application form and also be produced at the time of Interview. Whenever higher starting pay is requested, unless an authentic document/certificate showing present basic pay and details of all kinds of other allowances are produced, no request for higher starting pay can be entertained. Those candidates who are not already in service anywhere shall give proper reasons justifying their demand for a higher starting pay.

The application form should reach on or before **10-7-1985** to the Registrar, M. S. University of Baroda, VADODARA-390002.

Applications on plain paper will not be considered.

The Candidates if called for interview will have to come **at their own expenses.**

R.V. Kothari
REGISTRAR

CALCUTTA UNIVERSITY

CALCUTTA

No. Est/2/85

Dated : 28th May 1985

Applications are invited for the post of whole-time Lecturers, Readers and Professors in the grade of Rs. 700-40-1100-50-1600 and Rs 1200-50-1300-60-1900 and Rs. 1500-60-1800-100-2000-125/2-2500 respectively in the following departments of the University's Post Graduate Centre at Agartala.

Departments

1. Chemistry	—	Professor	1
		Reader	1
		Lecturer	1
2. Life Science	—	Reader	1
		Lecturer	2
3. Mathematics		Professor	1
		Lecturer	1
4. Economics	—	Reader	1
		Lecturer	2
5. Bengali	—	Reader	1
		Lecturer	2
6. Sanskrit	—	Lecturer	3
		Professor	1
7. History	—	Lecturer	3
		Professor	1

Desirable Specialisation

1. Chemistry-*Reader-Specialisation in Inorganic Chemistry
   Lecturer-Physical Chemistry
2. Life Science-*Reader - Specialisation in Botany Stream
   Lecturer-(One in Cytogenetics & Tissue Culture. One in Nutrition).
3. Mathematics-Lecturer-Specialisation in Statistics/Economics/Mathematics

N.B.

This appointment is specifically meant for the Post-Graduate Centre at Agartala and subject to terms and conditions operative at the Centre. This service cannot be claimed to be transferred or absorbed to the services of Calcutta University at Calcutta in future. Applications received in response to previous advertisement in 1984 for any of the posts mentioned above remain valid.

Qualifications for Professor, Reader and Lecturer

Professor

An eminent scholar with published work of high quality actively engaged in research. Ten years' experience of teaching and/or research. Experience of guiding research at doctoral level.

OR

An outstanding scholar with established reputation who has made significant contribution to knowledge.

Reader

Good academic record with a doctoral degree or equivalent published work. Evidence of being actively engaged in (i) research or (ii) innovation in teaching methods or (iii) production of teaching materials..

About five years' experience of teaching and/or research provided that at least three of these years were at lecturer or in an equivalent position.

The condition may be relaxed in the case of candidates with outstanding research work.

Lecturer

(a) A doctorate degree or research work of an equally high standard; and

(b) Good academic record with at least second class (C in the seven point scale) Master's degree in a relevant subject from an Indian University or an equivalent degree from a foreign University.

Having regard to the need for developing inter-disciplinary programmes, the degrees (a) and (b) above may be in relevant subjects.

Provided that if the selection committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may relax any of qualifications prescribed in (b) above.

Provided further that if a candidate possessing a Doctor's Degree or equivalent research work is not available or is not considered suitable, a person possessing a good academic record (weightage being given to M.Phil or equivalent degree or research work of quality) may be appointed provided he has done research work for at least two years or has practical experience in a research laboratory/organisation on the condition that he will have to obtain a Doctor's degree or give evidence of research of high standard within eight years of his appointment failing which he will not be able to earn future increment until he fulfils these requirements.

The selected candidates will be placed on probation for one year which may be waived in exceptional cases. The appointment shall be subject to the rules laid down for the teachers from time to time.

Applications (seven copies) in prescribed form (obtainable from the University Sales Counter on payment of Rs. 10/- or in case by post on sending a self addressed 75 paise stamped envelope of 27cm x 13cm size with a crossed I.P.O. of Rs. 10/- in the name of Calcutta University) should reach the undersigned not later than the **26th June, 1985.**

The choice of the Selection Committee may not necessarily be confirmed to those who apply.

S.N. Ghosh
REGISTRAR

UNIVERSITY GRANTS COMMISSION

Bahadurshah Zafar Marg, New Delhi-110002

Applications are invited from the following categories of Indian scholars who propose to go to USSR for improving their qualifications and knowledge of Russian Language, Literature and/or collect material for their M.Phil and Ph.D. programmes in the above fields or in any aspect of Soviet studies in Soviet Institutions.

I (a) Teachers of Russian Language and Literature working in universities and institutions who propose to go to USSR for a period of upto one academic year for collecting materials for their M.Phil and Ph.D. work.

(b) Scholars of Russian Language and Literature who propose to go to USSR for a period of upto one academic year for collecting materials for their Ph.D. and M.Phil work.

II Teachers/scholars who have passed their M.A. in Russian Language, Literature and who propose to go to USSR for a period of upto one academic year for improving their qualifications in Russian Language, Literature.

III Students who have completed their advanced diploma in Russian Language, literature propose to go to USSR for the period upto one academic year for further studies.

IV Teachers/Scholars of Soviet studies working in Universities and Institutions who propose to go go USSR for a period of upto one academic year for collecting material for their M.Phil and Ph.D. work.

Those interested may obtain the prescribed application form from the Office of the University Grants Commission, Bahadurshah Zafar Marg, New Delhi-110002 through a formal application enclosing a self addressed envelope size 9″×4″ by **28th June 1985** and submit their applications duly completed in all respects, so as to reach the UGC Office by **15th July 1985**. Scholars who are employed may send their applications through the employer with a 'NO OBJECTION' Certificate.

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University News

JUNE 23, 1985

Re. 1.00

Information Service

FD·52

Jammu Varsity Convocation

(From L to R) : Prof. M. R. Puri, Vice-Chancellor, Shri R. Venkataraman, Vice-President of India (who delivered the convocation address), Shri Jagmohan, Chancellor, Shri G.M. Shah, Pro-Chancellor and Shri A.M. Naik, Education Minister.

CLASSIFIED ADVERTISEMENTS

KUMAUN UNIVERSITY

NAINITAL

Applications for the following posts are invited by 15 July 1985 on the prescribed form obtainable from the Registrar, Kumaun University, Nainital-263001, U.P. by sending a self addressed 9″ × 6″ envelope. Please enclose a crossed postal order / Bank draft of Rs. 5/- payable to the Finance Officer, Kumaun University ,Nainital for postal charges etc. (money order is not acceptable). Candidates who have already applied in response to the advertisement No. Affl. 113 dated 23-4-84 for the posts Prof. Chemistry, Geography, Mathematics and Reader Chemistry, Mathematics and Advt. No. 1477 dated 21-1-85 for the post of Lecturer Sanskrit need not apply again. They may, however, send the latest addition to their qualifications, change of address etc.

Sl. No.	Department	Professor 1500-2500	Reader 1200-1900	Lecturers 700-1600	Specialization
1.	Chemistry	1 TLR	1 TLR	—	—
2.	Mathematics	1 TLR	1 TLR	—	—
3.	Geography	1 R	—	—	—
4.	Geology	1 Temporary	—	—	for 5 years at first but likely to continue
5.	Zoology	—	—	1 TLR	
6.	English	1 R	—	—	
7.	Sanskrit	—	—	1 LV	Philosophy

Note : R-implies regular, TLR—implies temporary likely to be regular, LV—implies leave vacancy.

Qualifications

1. **For the Post of Lecturers**

(a) A doctorate degree or research work of an equally high standard in relevant subject, and

(b) Consistently good academic record with first or high second class master's degree or an equivalent degree of a foreign University in relevant subject.

2. **For Readers**

(i) Good academic record with a doctorate degree or equivalent published work, and active engagement in research or innovation in teaching methods or production of teaching materials; and

(ii) Five years experience of teaching or research including atleast three years as Lecturer or in equivalent position.

3. **For Professors**

Either-Eminent Scholar with published work of high quality and active engagement in research and ten years experience of teaching or Research and experience of guiding research at doctorate level.

OR

Outstanding scholarship with established reputation for significant contribution to knowledge.

Further details regarding qualifications, service terms and permissible relaxations in qualifications will be provided with the application forms. Preference will be given to SC/ST and disabled candidates if otherwise considered suitable by Selection Committee. Application form will not be sent by post after 6-7-1985.

R.C. Pant
REGISTRAR

PANJAB UNIVERSITY

CHANDIGARH

(Advertisement No. 9/85)

Applications are invited for the following posts so as to reach the Registrar, Panjab University, Chandigarh, by **12-7-1985** alongwith postal orders for Rs. 10/-. Fourteen days extra time is permissible to the persons who have to submit their applications from abroad.

1. **Director-1** (Deptt. of Adult & Continuing Education & Extension). Rs. 1500-60-1800-100-2000-125/2-2500.

2. **Assistant Directors-2** (One for deptt. of Adult & Continuing Education & Extension and one for Centre for Continuing Education). Rs. 1200-50-1300-60-1900.

3. **Project Officers-3** (One for Centre for Continuing Education and two under 'Eradication of Adult Illiteracy under point 16 of the new 20 Point Programme of Govt. of India i.e. one for Continuing Education and Extension Work and one for Population Education). Rs. 700-40 1100-50-1600.

4. **Technical Assistant-1** (Deptt of Adult & Continuing Education & Extn.,) Rs. 825-25-850-30-1000-EB-40-1200-EB-50-1400-60-1580 (Revised).

Candidates who have already applied for these posts advertised under Advertisement No. 11/84 need not apply again and their applications will be considered valid and entertained if they possess the requisite revised qualifications as per detailed qualifications for this advertisement, a copy of which will be supplied on demand.

Persons already in service should route their applications through proper channel. Incomplete forms and those received after the due date are liable to be rejected unless the Vice-Chancellor condones the delay or discrepancy by a special order. Attested copies of certificates in support of qualifications be attached to the applications. Serving employees, however, may send their applcations on the prescribed proforma, direct to the University. They may route another copy through their department. They will be allowed to present themselves for interview only on production of 'No Objection Certificate' from their employers. Canvassing in any form will disqualify the candidates.

Application forms alongwith detailed qualifications can be obtained from the Cashier, Panjab University, personally on payment of Rs. 2/- or by making a written request to the Deputy Registrar (Establishment), Panjab University, Chandigarh, accompanied with self addressed stamped envelope of 23 × 10 cms and a postal order of Rs. 2/- drawn in favour of the Registrar, Panjab University, Chandigarh-160014.

FOR DETAILS SEE INSTRUCTIONS FOR CANDIDATES ENCLOSED WITH THE APPLICATION FORM.

UNIVERSITY NEWS

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Opinions expressed in the articles and reviews are individuals and do not necessarily reflect the policies of the Association

Editor :
M. S. RAMAMURTHY

Perspectives for 2000 A.D.

The Delhi Chapter of Indian Institute of Science Alumni Association, as part of the Platinum Jubilee Celebrations of the Institute, organised a seminar on March 3, 1985.

Given below is a report of discussions held at the Seminar.

The 21st Century will be ushered in only 15 years from now. A pertinent question was asked 'What would be the quality of our life then'. In other words, where will India be in respect of such essential aspects as science and technology, energy and industry, agriculture and food, education and automation, the newer tools of progress as we enter the next century. These were deliberated upon at the Seminar.

With Prof. M.G.K. Menon, Member of Planning Commission as moderator, the other panelists at the Seminar were Dr. S. Varadarajan, Director General C.S.I.R.; Prof. C.R. Mitra, Director, Birla Institute of Technology and Science, Pilani; Dr. P.P. Gupta, Chairman-cum-Managing Director of Computer Maintenance Corporation Limited; and Dr. P.D. Dasappa, Credit Expert in the Ministry of Agriculture. The last three are also alumni of the Indian Institute of Science.

Shri S. Samaddar, Member, U.P.S.C. and President of the Association introduced the subject to the Panelists and the audience. He said the subject assumed added importance as the new Government wished to manage affairs of the country in a professional way and take the country to the next century with high hopes. The panelists were requested to deliberate on the aspects listed and involve the audience in the discussions. Shri Samaddar also commented on the special significance of the Founder's Day.

Prof. Menon said that the qualities of Jamshetji were his foresight and patriotism which gave him the perception of the growing needs of the country in founding such a scientific institution and which qualities again were needed for taking us into the 21st century. In elaborating on the task of scientists and planners, he recalled a message which he saw in his youth on the table of the world famous scientist Pierre Curie at Paris: "To make of life a dream and occasionally to turn that dream into reality." He further observed that as per UNCTAD, India's growth rate could be phenomenal in the immediate future compared to its recent past. It may well be the highest growth rate in the world.

This is a slightly edited version of a report received from Shri S. Samaddar, Member, Union Public Service Commission.

Demographic and other parameters

Dr. S. Varadarajan, as the lead speaker, outlined the basic frame-work of the country 15 years hence and observed that the country would have to cope with a population of nearly a billion—975 million to be more precise. Life expectancy could well be up by another 10 years nearing 67 years. The country was likely to be more urbanized. We would be in need to produce food nearly 1½ times the present quantity without any significant addition to the cultivable land.

According to Dr. Varadarajan, antibiotics would play a significant role in controlling diseases and thus reduce infant mortality sharply and increase life expectancy. A large share of locomotion would be by motorized vehicles. The pattern would be as in the West in another aspect also, viz. a smaller population, mainly youth, would have to work for a larger population.

The speaker also mentioned that the common man would consume a higher amount of energy. Presently we are consuming around 38 million tonnes of oil which is likely to go up by nearly four times in 2000 A.D. Coal consumption would also touch nearly 400 million tonnes, he said. The technology for renewable energy sources would not however be viable by 2000 A.D. but perhaps by 2015 A.D., he opined.

Dr. Varadarajan, significantly, pointed out that planned preparedness was the key word to enter the 21st century. He emphasised the need to shed obsolescence and adopt the latest technology and equipment. According to him, we were good in introducing new technology but poor in getting rid of the old. As such real time technology was going very much above us. With proper management we should be able to reach world standards in 15 years time.

On our external trade balance Dr Varadarajan pointed out that the situation was critical and unless competent decisions were taken about automation and robotics, India could be in serious economic trouble.

Prof. Menon in his comments on, Dr. Varadarajan's views, pointed out that there was a serious resource gap in the Seventh Plan. As such it was imperative that various agencies involved co-ordinate their efforts for better management of the scarce resources, in particular, in technology development and its utilisation. In his comments on employment a little later, Prof. Menon said that additional employment required to be generated in the secondary, tertiary and service sectors while primary industries should go in for automation if we are to remain competitive in the world market.

Education

Prof. C.R. Mitra, while speaking on education in the year 2000 held an opinion somewhat different from some current views on the delinking of university degrees from employment. According to him, degrees would continue to be linked with employment and social standing. He, however, felt that universities would continue to face a severe shortage of resources for formal education despite the rising pressure of the student population. The result, according to Prof. Mitra, would be a mixture of modest achievements with non-realisation of hopes. Illiteracy would not be wiped out in near future though University education would expand mainly through correspondence courses. Prof. Mitra did not foresee any marked change in the management of education in the universities which would be more or less tradition bound. Turbulences would continue in them and their management would remain 'lackadaisical, traditional and at loggerheads'. Accordingly, there would be co-existence of excellence and indifferent performance.

Prof. Mitra suggested a solution. According to him, a debate should be initiated on necessary reforms in the education system so that it could be brought in consonance with the emerging social and technological changes backed up by increased resources. He emphasized that there was no need to be a pessimist and the innovators would come forward to solve problems.

Commenting on Prof. Mitra's talk, the moderator held that although there was urgent need to change the education system, it could not be done overnight. According to him, there was a need for a shift in the entire system so that with the inputs as of today, the outputs could be different from that of today. The entire world children are growing up in digital culture and a similar need is envisaged here.

Computers

Dr. P.P. Gupta, dealt in detail with the future of computers as we enter the next century. Commenting on the present state of computer utilisation, he said there was hardly any worth the name. The world computer market is likely to reach the level of nearly 2 lakh crores by 1990. India is nowhere in the reckoning, Dr. Gupta maintained. Looking at the world scenario and the difficulties we face in procuring the desired components and materials, it was imperative that the country became self reliant in the key areas of digital technology like VLSIs, LSIs and micro-processors and there was an urgent need of setting up a centre for developing such technologies. It was very essential that large capacities are set up for the production of chips and components in the country.

Dr. Gupta deprecated the tendency of the computer industry importing most of the components and peripherals. He suggested that the Indian computier industry should get together to produce standardized computers rather than going in for variety. Due to economy of scale, computers could then be produced at a lesser cost. The country needed a large number of computers and with the manpower available, the country could use computers with indigenous software.

What was needed was to make computers easily available and cheaper. The available electronic technology should also be used to reduce illiteracy. He admitted that there was reservation and resistance in the country particularly among the working class in accepting computers. He explained that t was a natural reaction against innovation and change and had occurred in other countries too. What was needed was to familiarise the instruments and working to the people and usher in a computer culture. In this context he cited the example of Australia which had since taken to computers in a big way. The extensive use of computers would help better the life of people, Dr. Gupta concluded.

In his comments Prof. Menon agreed with Dr. Gupta by quoting the example of Television broadcasting. He said when telecasting started in India it was visualised as a tool for social education, but it had proved to be a medium of popularising film culture. There is a need for this medium to work for social change and in the removal of illiteracy.

Agriculture

Shri P.D. Dasappa took up the scenario as he would envisage in the year 2000. He pointed out that by the end of this century the population of the country is projected to rise in the neighbourhood of a billion. What are the food prospects for this? The requirement of foodgrains for this population have been projected to 240 to 250 million tonnes, Shri Dasappa pointed out. To achieve this the production per hectare from the present level of 1.7 tonnes would have to be increased to something like 4 tonnes. This is possible with proper water management and optimum application of other inputs.

One of the impediments, Shri Dasappa pointed out, was the uneconomical fragmentation of land holdings. Institutional changes are necessary for the consolidation of land for improved agriculture and output.

Question & Answer

The question and answer session proved lively. Topics brought up by the audience included constraint of reasources for ongoing as well as new projects in several sectors, the need for renovation and modernisation in steel industry, the pricing out of Indian products due to phenomenal rise in labour wages and other input costs, measures for the control of pollution in basic and chemical industries. A pointed question was to Dr. Varadarajan who had investigated into the leakage of lethal gas in the Union Carbide factory at Bhopal—whether such a tragedy could occur in the next century. In briefly delineating his findings, Dr. Varadarajan said that the villain of the piece was an extremely small quantity of water which leaked into methyl-iso-cyanate and built up pressure leading to the release of gas and deaths. With improved upkeep and other precautions taken in the light of experience in this tragedy, such a catastrophe could be ruled out in the future, he hoped.

Shri Samaddar raised the question of computer culture and apprehended that, in the Indian context where the working force was neither sophisticated nor disciplined to the same extent as in developed countries, it might not be possible to introduce computers smoothly and quickly, particularly in view of the trade unions raising the bogey of shrinking employment. He felt that the political masters required to be convinced first before vital time is lost, and that required a massive educational programme. Dr. Gupta and Prof. Menon agreed with the possibility and hoped that measured steps in this regard in the sectors where computers are essential may gradually change the attitude of trade unions and political parties. To that end technocrats and administrators had to struggle. Dr. Mitra cited the example of colleges and universities in preparing the students who had to be the catalysts for the coming generation.

Prof. Menon, while wrapping up the seminar made certain observations which had far reaching significance. Commenting on the myriad of problems facing the country, he said "the longer we wait to solve our problems the more difficult they become, simply due to demographic pressures". We have to abolish high cost structure to generate more employment. Automation and computers must be employed for fast development and competitiveness, while the industry had to produce primary goods and extra employment had to be generated in the secondary, tertiary and service sectors.

He maintained that we must prepare ourselves for some of the essential changes, for example, for the post-industrial revolution. We could not hold it back and must adopt certain fundamental technological developments if we had to survive the competition in the modern world.

On work of the scientists here and Indian scientists abroad, Prof. Menon said that it was almost similar. Only a few like Prof. Chandrasekhar or Dr. Khurana get high recognition for their extra-ordinary work. Comparing the recognition given to extra-ordinary scientists in India, he sharply pointed out that the media would just ignore them. On the other hand they would play up even a small event connected with a politician or a film star. We have a wrong value system, he said. He concluded, however, with an optimistic hope that we would enter the next century well prepared.

Shri S.S. Madan, the Secretary of the Association proposed a vote of thanks to the panelists whose participation and the alumni and families whose presence in large number made the function a success. ☐

International Conference On New Technologies in Higher Education

On the occasion of the Diamond Jubilee of the Association of Indian Universities (AIU) an International Conference on "New Technologies in Higher Education" is being jointly organised by the AIU, Indian Institute of Technology, Delhi', Jawaharlal Nehru University, Jamia Millia Islamia and the University of Delhi. The two-day Conference will be held at the Indian Institute of Technology, Hauz Khas, New Delhi, on November 28 and 29, 1985.

OVERVIEW AND OBJECTIVES

The Association of Indian Universities, Indian Institute of Technology, Jawaharlal Nehru University, Jamia Millia Islamia and University of Delhi are jointly organising an International Conference at New Delhi on the occasion of the Diamond Jubilee of the Association of Indian Universities. The topic of the Conference "New Technologies in Higher Education" lends itself to consideration of methods and techniques contemporarily used and also new educational technologies making use of TV, Video, Satellite communication and Computers so far as they relate to different aspects of higher education. The objective of the Conference is to assess the possibilities of these technologies in the background of the broad social and cultural context and trends of higher education in India and other developing countries. The current UGC Programme through INSAT Satellite, which will be completing a year, would also be reviewed. In doing so the experience of newer technologies like, Computers, Information Processing etc. in the developed countries will also be considered and ideas developed regarding strategies which correspond to the goals and objectives of higher education in the country. Possible areas of research and experimentation will be discussed.

PROGRAMME

The venue of the Conference will be Indian Institute of Technology (IIT), Hauz Khas, New Delhi.
The Conference will be conducted under four panels to be held concurrently after the opening session. It will conclude with a plenary session.

NOVEMBER 28, 1985

INAUGURATION OF TECHNICAL & BOOK EXHIBITIONS	9.30 a.m.—10.00 a.m.
OPENING SESSION (with Keynote Address)	10.00 a.m.—11.00 a.m.
SESSION II (Four Panels)	11.30 a.m.— 1.00 p.m.
SESSION III (Four Panels)	2.00 p.m.— 5.00 p.m.
OPEN HOUSE— MASS COMMUNICATION CENTRE	6.00 p.m.— 8.00 p.m. (JAMIA MILLIA ISLAMIA)

NOVEMBER 29, 1985

CONCLUDING PLENARY SESSION (Session IV) 9.30 a.m.—11.00 a.m.

The following themes will be discussed under four panels simultaneously during Sessions II and III.

PANEL I

NEW APPROACHES AND TECHNIQUES CURRENTLY PRACTISED IN UNIVERSITIES AND COLLEGES

The purpose of this panel is to present information and evaluation of current practices, both conventional as well as new technologies, e.g. correspondence, radio and other audio-visual techniques of non-formal education.

PANEL II

EMERGING NEW TECHNOLOGIES AND TECHNIQUES

This panel will deal with case studies and experiences of educational technology, comparative merits of different techniqes, use of TV, Computer and Satellite and evaluation of these modern techniques from the standpoint of pedagogic effectiveness and related problems.

PANEL III

MANAGEMENT AND ECONOMICS OF MODERN TECHNIQUES AND APPROACHES IN HIGHER EDUCATION AND APPLICATION OF MODERN TECHNOLOGY

The purpose of this panel is to study, exchange information and make comparative study of these techniques from the view point of costs, administration and other related problems.

PANEL IV

SOCIAL AND CULTURAL ASPECTS AND EDUCATIONAL ENVIRONMENT

This panel will spell out features of Indian society and culture with special focus on communications both traditional and modern. It will also survey the broad educational scene in higher education. The implications of these phenomena for the use of new technology in higher education will be studied.

Concluding Plenary Session

RECOMMENDATIONS FOR RESEARCH AND INVESTIGATIONS IN NEW TECHNIQUES AND FOLLOW-UP ACTION

The main purpose of this session is to make recommendations on the basis of the reports of the panels and suggest draft proposals for universities/colleges for implementing a programme of adoption of new technologies in higher education and to identify technically developed agencies to help in the implementation of such programme.

PARTICIPATION

Institutions of higher learning and research, governmental and private organisations in the field of electronics, space, information and data processing and related fields, as well as individuals are invited to participate. Such participation can be in terms of presenting a paper, or demonstration of technologies, aids and other learning devices developed in India and abroad.

EXHIBITION

It is proposed to hold an exhibition of books, journals, equipment for Video, TV and Computer aided instruction and demonstration of new technologies during the Conference. Entries for the exhibition are invited.

VENUE

The venue of the Conference and the Exhibition will be the Indian Institute of Technology, Hauz Khas, New Delhi-110016.

PAPERS

The papers should be prepared in accordance with the instructions. Papers (accompanied by a two page abstract) not exceeding 3000 words, should be sent latest by July 31, 1985 to the Convenors.

Prof. TAPAS MAJUMDAR
Zakir Husain Centre for Educational Studies
Jawaharlal Nehru, University
New Delhi-110067, INDIA

Prof. S. SHUKLA
Head
Department of Education
Jamia Millia Islamia
New Delhi-110025, INDIA

For further information, regarding the Conference, please write to:

Prof. L.R. SHAH
Director
Adult, Continuing Education & Extension Unit
Jawaharlal Nehru University.
New Delhi-110067, INDIA

9 JUL 1985
C.F.T.R.I. MYSO

Shri Venkataraman Addresses Convocation of Jammu University

Excerpts from the Convocation Address delivered by Shri R. Venkataraman, Vice-President of India, at the University of Jammu, Jammu.

"When looking at the relationship between education, the labour market and employment, the role and responsibility of education and training in the employment context must be defined carefully. Education is neither causing unemployment nor does it increase the overall level of employment. Changes in educational policy cannot do very much to remedy overall imbalances. The remedy for unemployment lies in overall growth of the company and not on reform of education only. At the same time, however, education can facilitate smooth transition from learning to economic activity. There are three main issues in regard to a study of traditional educational systems and employment problems. Firstly, education is a means through which non-apparent rural inequalities and unemployment manifest into visible and often audible signals and urban unemployment. So long as the process of education is influenced by urban-biased perspectives, considerations and instruments, it is difficult to appreciate the role of education in rural development and of the benefits from education for the rural communities and groups. Secondly, educational system aggravates the disfunctions between levels and types of education on the one hand, and working-age population and labour absorption capacity of the economy on of other. In fact, neither the type of education provided, nor the spirit prevailing within the existing educational system, offer youth means to find their way through the societies awaiting them after completion of their studies. The situation is still more critical for those who have been left behind or on the periphery of the education system who have abandoned or have been rejected by the system either due to societal handicaps or because the system was unable to offer them courses of study or educational experiences which would be meaningful and useful to them in their socio-cultural settings and in their field of economic activity. The type of education imparted should correspond to the societal tasks and economic roles to be played by the educated.

"It is not enough to accumulate knowledge and store it. This could better left to print or electronic media which are now available increasingly in centres of technological studies and research in humanities. What is imperative is that you should apply the theoretical knowledge to practical tasks. Leadership in society means leadership to lead people into avenues of productive employment, whether it is in the field of self-generated venture or in established organisations. Our society suffers from a variety of imbalances and inequalities. As you go forward in life, you must necessarily engage yourself in economic and social development which narrows down disparities and gradually assists society in raising its standards of behaviour and morality. Poverty has many faces but the worst is poverty of ideas. You, as graduates of this University, have been trained to think and it is your duty to think of ways to lessen poverty of ideas and enrich social programmes with new ideas and programmes. I wish to remind you of a quartette:

Life's battles do not always go
To the strongest and fastest Man
Soon or late the Man who wins
Is the man who thinks he can.

It is, therefore, one's determination that takes one to success.

"The diversity of our nation is an asset and, in no case, should it be regimented, into set patterns of thinking. You must not impose any pre-conceived, pre-determined models on her. In arts, humanities and sciences, there is an infinite avenue for new experiments, but these experiments must be founded on ethical and moral principles and accepted universally recognised truths of life. Cultural regeneration does not imply cultural isolation. It implies that while each group will foster its own cultural forms and arts, it will try to learn from other cultures about the basic foundations of our national heritage and thereby inculcate values such as national unity and integration, tolerance, harmony and a sense of togetherness in moulding a common destiny. This would undoubtedly encourage nationalism and patriotism on the one hand and make community life meaningful and full of sweetness and light. When our social institutions grow in such an invigorating environment and processes like education derive their vitality and moorings consistent with societal tasks and relevance, we can look forward to the emergence of enlightened and enterprising individuals and of a vibrant and dynamic society.

"Your education must not end today. Education is an endless process and we go on learning day after day in the vast laboratory of mankind. There is a dialectical relationship between the system of education today and of tomorrow. The educational system as it is currently structured should inherently carry the seeds of social change not through force but through voluntary acceptance. Ideally, education provides us with a frame for action.

"A great deal of thought is being bestowed on the reform of education particularly after our dynamic Prime Minister has come out strongly against the status quo. Any movement for reform should have a goal and unless goals are defined, mere permutation and combination of teaching systems will pass off as reform. For instance, when I was a student in the secondry schools, we had a eleven year school course, two year intermediate course and a two year degree course. When my children came to that stage, they had a eleven year school course, one year pre-university course and three year degree course. When my grand-children are now going to school, they have a 10+2 secondry education and a three year degree course. These additions and subtractions have not made the children wiser merely by the change in the years at each stage. If anything, these constant changes have just left the students very much where they were without any qualitative improvement in education. The foremost goal of any education is the inculcation of noble qualities like patriotism, devotion to duty, national integration, communal harmony and virtues like honesty, punctuality, discipline and so on. No nation however advanced in military power or in sophisticated science and technology will survive as a nation if it has no basic qualities and virtues detailed earlier. The best time to educate one on these qualities is in the kindergarten and primary stages. Children should be taught the glory of India, its heritage and its ancient culture. When some of the most advanced countries in the world were either not discovered or living in comparative barbarity, Indian civilisation had spread throughout Asia and other regions of the world. Every Indian child should know this even before he learns the alphabets and arithmetic. Instead of the present text-books which teach A for Apple, B for Bat and C for Cat, new text-books should teach A for Allah, B for Buddha and C for Christ and so on bringing out the unity of religions. Virtues like discipline and punctuality inculcated in the early childhood will remain ever as part of the human system. The Central Government should draw up a syllabus for human development and insist that at least one period each day in the primary school curriculum should be devoted to moral development. In my view, no educational reform that neglects character building at the impressionable age will bring any results.

"Secondly, the concept that higher education is a passport to employment should be demolished. When in the middle ages scholars went to Oxford and Cambridge and the great seats of learning in Europe, they did so to seek knowledge and not employment. Since the British wanted scribes to fill their administration, they used the universities as recruiting agencies for their subordinate services. If we make recruitment to each service on the basis of a test of the qualities required for that class of service and not on the basis of the academic qualification, the rush for university education of students totally unsuited to pursue higher education will abate. Thus, job selection should be based on the job needs and not on academic qualifications. We have today recruiting agencies for each and every kind of service and if those agencies hold tests without insisting on a pre-requisite academic degree, the indiscriminate rush for university education may be contained.

"In this connection, I should like to repeat what I have been saying in some other convocation addresses, that students in the universities should have the freedom to study any combination of subjects like economics, psychology, mathematics, political science etc. instead of taking a rigid combination of pre-determined subjects in science group or in the arts group. Now that the semester system has been adopted in our country, it should be easy to follow the western pattern of education which requires only a certain number of credits in subjects of the students' choice. Under our pattern, a genius in mathematics may not even obtain a degree if he does not make good in the other combination of subjects. Such freedom of choice will help students to develop their faculties to the fullest extent. New Universities like Jammu may give this experiment a trial..."

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UNIVERSITY OF RAJASTHAN

JAIPUR

NOTIFICATION

The University will reopen for the session 1985-86 on Monday, the 8th July, 1985. Applications for new admission to the following courses provided by the University are invited on the prescribed form by the dates mentioned below in para 2 :

1. Three Year B.A., B.Sc. & B.Com. (Pass), Course.
2. Two Year B.A., B.Sc. & B Com. (Hons.) Course.
3. Three Year B.Sc. (Home Sc.) Course.
4. Two Year M.A. Course in Hindi, English, Sanskrit, Philosophy, Urdu, Music, Drawing & Painting, History, Economics, Public Administration, Political Science, Sociology and Psychology.
5. Two Year M.Sc. Course in Physics, Chemistry, Zoology, Botany and Geology.
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7. Two Year M.Com. Course in Accountancy & Bus. Statistics, Business Administration, Economic Administration and Financial Management.
8. One Year Higher Proficiency Certificate Course in English.
9. Four months Certificate Course in Spoken English.
10. One Year Post-graduate Diploma in Indian Culture.
11. One Year Certificate and two year Diploma Course in French, German and Russian.
12. Three Year Post-graduate Diploma Course in Cost & Works Accountancy.
13. One Year Post-graduate Diploma Courses in : (i) Banking & Finance; and (ii) Co-operation
14. One Year Certificate and Two Year Diploma Course in Steno-typing (English and Hindi).

2. The last date for receipt of application forms for new admissions to various classes will be as under:

(i) For First Year TDC Classes.	: 21st June, 1985, without late fee and 28th June, 1985 with a late fee of Rs. 10.
(ii) For Second Year TDC Classes	: 1st July, 1985, without late fee and 8th July, 1985 with a late fee of Rs. 10.
(iii) For all other classes	: 15th day from the date of declaration of result of the qualifying exam. of this Univ. without late fee and 22nd day with a late fee of Rs. 10.

No application forms will be entertained after the expiry of the last date for receipt of application forms with late fee.

3. The prescribed application form (with Prospectus containing relevant information for new admissions) can be obtained from 7th June, 1985, on cash payment of Rs. 5 per form from the Rajasthan Vishwavidyalaya Sahkari Whole-Sale Upbhokta Bhandar Ltd., Univ. Campus, Jaipur; Dean Students Welfare, Jaipur; University Maharaja's College, Jaipur; University Maharani's College, Jaipur; University Rajasthan College, Jaipur, and the University Commerce College, Jaipur. Candidates seeking admission to M.Sc. Geology can obtain the application forms from the Head of the Rajasthan University Department of Geology, Station Road, Udaipur. Application forms can also be obtained by post on remittance of Rs. 10 (including postal charges of Rs. 5) per form by money order to "The Registrar, University of Rajasthan, Jaipur" stating the purpose of remittance and giving full address on the M.O. Coupon.

4. Eligibility conditions and other rules for admission are given in the Prospectus.

5. Application forms for admission to the Institute of Correspondence Studies, University Studies in Law, R.A. Podar Institute of Management, Department of Library Science and Department of Dramatics should be obtained from the Director of the Institute/Head of the Department concerned.

6. Enquiries regarding M.Phil. course and registration for the degree of Ph.D. should be made from the Department concerned.

REGISTRAR

National Symposium on Arthur Miller

A six-day UGC sponsored symposium on "Arthur Miller as a representative of modern American Drama" was organised at Government Postgraduate College, Dharmshala, Himachal Pradesh, from 3 June to 8 June, 1985. Shri N.R. Pathak, Director of Education, Himachal Pradesh, inaugurated the symposium. In his presidential remarks Shri Pathak appreciated the theme chosen for the symposium and suggested that the participants should also discuss the problems of higher education and English teaching in India and make some solid, workable suggestions. As many as thirty-eight college and university teachers, representing five States, seven Universities and eighteen colleges and Departments, participated. Dr. Atma Ram, Principal of the College, served as the Director of the symposium.

The objective of the Symposium was to provide a forum as well as ample time to University and college teachers for interaction, for elaborate and free discussions on various aspects of Arthur Miller, a famous American dramatist. It took the shape of a lecture series by eminent teachers followed by intensive discussions. In twelve sessions, twelve perceptive and illuminating research papers on different aspects of Arthur Mliler and his plays were presented and discussed in detail.

The symposium had some distinctive features: involvement of MA English students, a book and journal exhibition put up by the college, another exhibition organised by the Himachal Pradesh Language Department and Himachal Pradesh Academy, still another of Kangra Paintings and Art arranged by a noted artist, Shri O.P. Taak, and a session on poetry recitation. A (prolonged) session was devoted to the system of higher education and problems of teaching of Engligh in the country. To tone up the standards of education the participants suggested several measures which included, among others, well-defined goals of education; value education; job-oriented education; proper administration; better planning and management of resources; University Education Commission, academicians and men of character and merit as teachers and educational administrators; a reward and punishment policy for teachers; full autonomy, more grants for books and lab equipment; more opportunities for faculty improvement; selective admission, a workable teacher-student ratio; overhauling of examination system; realistic and uniform syllabi; more teaching days, meaningful student activities and student services; active involvement of students; and interaction of institutions of higher education.

In the field of English language teaching, they made the suggestions which included : Due stress on phonetics and spoken English; greater emphasis on language teaching; grammer and written work at the college level; use of question-answer method; right selection and perparation of text-books; adequate incentives, audio-visual and other aids; refresher courses; orientation of teachers; extra reading and writing; introduction of remedial and merit classes; adoption of new methods of teaching; proper evaluation and regular correction work; and compulsory house-tests and regular attendance.

Manipur Varsity organises seminar on folklore

A national seminar on Common Motifs in Indian Folklore was held in Imphal recently under the joint auspices of the Central Institute of Indian Languages, Mysore (CIIL), and the Department of Manipuri Language and Literature, Manipur University. Inaugurating the seminar at the Manipur University, the Minister of Education, Mr. I. Tompok Singh, projected the setting up of the Institute of Manipuri Studies, which would have, among others, a separate Department of Folklore. He appreciated the work done so far on folklore and related disciplines in the University.

More than 15 participants from different parts of the country and 30 delegates from the State attended the seminar. Prof. K.J. Mahale, Vice-Chancellor of University presided over the inaugural function.

The theme of the seminar was introduced by Dr. Jawaharlal Handoo, Incharge Folklore Unit of CIIL. He emphasised two aspects of the theme, the academic and the national; academically, he pointed out, the common motifs have not so far been researched by scholars of Indian folklore. In terms of the nation, he emphasised that common motifs of Indian folklore will reinforce integration of the country.

Prof. Somnath Dhar, an eminent folklorist presented a paper, on "Common Motifs in Indian-Asian Folklore', in which he showed the diffusion of important motifs on the Indian subcontinent and the Asian continent.

Commenting on the paper, Vice-Chancellor Prof. Mahale pointed out La Fontaine's credit to the *Panchatantra* tales, the use of animal tales to criticise despotic regimes, and the use of comics in the dissemination of folklore in France, USA and India, etc.

The papers presented at the seminar included: "Heroic traditions in early Manipuri poetry"; "Propitation rite of the Meiteis of Manipur"; "Contact, togetherness and commonness among tribal and non-tribal populations of North East India"; "Approaches to Ethnomusicology: the Indian Case"; "Structuralism in Manipuri Riddles", etc.

Yearbook on India's Foreign Policy

Dr. Satish Kumar, a Professor of Jawaharlal Nehru University, has launched on a publication on India's Foreign Policy. The publication, 'The Yearbook on India's Foreign Policy' published by a well known publisher of international standing intends to be an independent critique of Inda's foreign policy on a continuing basis and from a wide range of perspectives.

With its geostrategic importance and its active involvement in international affairs, India's foreign policy formulations have had an impact far beyond its own frontiers. However, there is yet no forum which provides as on-going discussion and analysis of India's foreign policy. It is to fill this lacuna that the series has been conceived.

Each volume will consist of three sections : (i) a comprehensive review of India's foreign policy concerns during the year; (ii) specially commissioned analytical essays written by scholars, diplomats, journalists and other professionals, on specific region or country or issue which figure prominently in the conduct of India's foreign policy; and (iii) important primary documents relating to the issues discussed.

The first volume in the series, which has already been published covers the period from July 1982 to June 1983.

The series is expected to meet the needs of diplomats, journalists, scholars and parliamentarians who require a single source which will provide both analysis and reference material.

Second national seminar on Tridoshas organised at BHU

A second national seminar on Tridoshas was organised under the auspices of the Department of Basic Principles, Institute of Medical Sciences of the Banaras Hindu University. The objective of the seminar was to undertake and explore all the aspects of Tridoshas based on their scientific and texual footings.

The seminar was inaugurated by Prof. R.L. Singh, former Vice-Chancellor of Meerut University. Prof. K.N. Udupa, Emeritus Professor, BHU delivered the valedictory address.

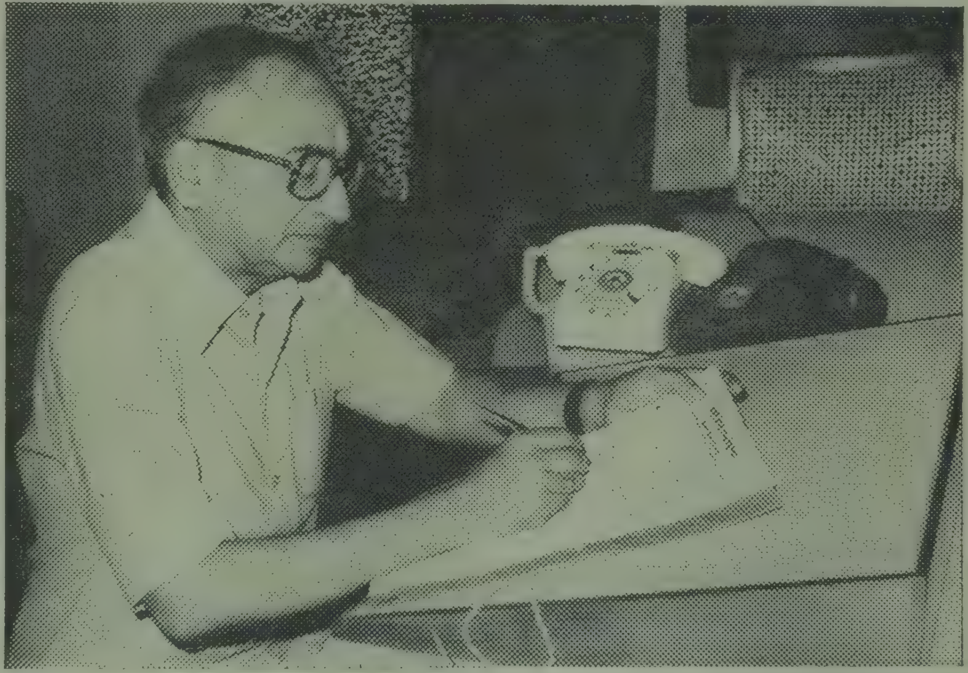
About 80 delegates from different parts of the country participated in the deliberations of the seminar.

There were seven scientific sessions, out of which the first three sessions were exclusively devoted to Basic Principles of Ayurveda.

Prof. Rastogi Takes Over as VC, BHU

Prof. R.P. Rastogi took over as Vice-Chancellor of Banaras Hindu University on 30th April, 1985. Earlier, he was Professor and Head of Department of Chemistry at the Gorakhpur University, Gorakhpur.

Prof. Rastogi was born on 4th June, 1926 at Lucknow. He obtained his MSc and Ph.D. degrees from Lucknow University in 1948 and 1952 respectively. He did his specialisation in Physical Chemistry: Equilibrium and Non-equilibrium thermodynamics, Cross-phenomena and oscillatory phenomena Combustion of Rocket Propellants.



Prof. R.P. Rastogi

Prof. Rastogi was a Lecturer in Chem. at Lucknow Univ. (1949-59); Reader in Chem., Panjab University, Chandigarh (1959-62); Prof. of Chemistry, Gorakhpur University from 1962 till he assumed charge of his new assignment.

He is recipient of Khosla National Award 1974; FICCI National Award 1975; UGC Meghnad Saha Award 1982.

Prof. Rastogi is a Fellow of the (i) Royal Society of Chemistry, London; (ii) American Institute of Aeronautics & Astronautics; (iii) National Academy of Sciences, Allahabad; (iv) Indian Academy of Sciences, Bangalore; (v) Indian National Science Academy; and (vi) Royal Society and Nuffield Foundation Commonwealth Bursar 1956-57.

He participated in several national and international conferences in UK, Denmark, East & West Germany, USA and delivered lectures in Poland, Sweden and France. He has published several books and over 250 research papers in international juornals of repute.

Under these sessions, the structural, functional as well as the scientific explorations related to Tridoshas were discussed at length. The fourth and fifth scientific sessions were devoted to Kayachikitsa, where the application of Tridoshas was discussed both at clinical and experimental parameters. The sixth session Draya-Guna & Rasashastra, relevant to Tridoshas, was also comprehensive and many aspects pertaining to qualities of Dravyas and their responses on the body were precisely discussed in the light of Tridoshas. In the last scientific session on Shalya-Shalakya & Prasuti-Tantra, participants from Bangalore and other parts of India presented their papers dealing with the scopes of Tridoshas both on experimental and conceptual basis.

The topics discussed at the seminar included: (i) Fundamentals of Tridoshas; (2) The Tridoshas and its application in Dravya-Guna; (3) The Tridoshas and its application in Kayachikitsa; (4) The Tridoshas and its application in Shalya Shalakya; (5) The Tridoshas and its application in Prasuti-Tantra; (6) The Tridoshas and its application in Rasa-Shastra; and (7) The Experimental and Scientific Approaches to Tridoshas.

Remote-sensing application centre established at AMU

The Aligarh Muslim University has established a remote sensing application centre for resource evaluation and geo-engineering. The centre has started functioning under the directions of Dr. Iqbaluddin.

According to Vice-Chancellor of the University, Shri Hashim Ali, the centre would carry out teaching, training and research in the field of remote sensing besides imparting consultancy services to user organisations in the country. He said that the centre would start instructional programmes leading to Ph.D., Master's degree and postgraduate diploma in remote sensing applications. Courses in exploration Geology and Physics are also proposed to be started, the Vice-Chancellor added.

Shri Hashim Ali said that during the seventh plan period the university proposed to expand the activities through a projected grant Rs. 4.50 crores.

M. Tech. course in polymer technology at Cochin Varsity

On the recommendation of the All India Board of Post graduate Studies and Research in Engineering and Technology, the University Grants Commission has approved the immediate introduction of an M. Tech programme in Polymer Technology in the University of Cochin.

The student intake to the course will be 12 including two sponsored candidates. Each admitted candidate will get a scholarship of Rs. 1,000/- per month and a contingent grant of Rs. 3,000/- per year. The UGC has sanctioned a non-recurring grant of Rs. 7 lakhs and a recurring grant of Rs. 2.7 lakhs for this programme.

Science park at Tamil Varsity campus

A science park for children on the model of the Sarabai Science Museum at Ahmedabad is shortly to be organised at the new campus, Tanjore, by the Tamil University. Efforts are being made to secure a rail engine and an aeroplane engine for exhibition for the benefit of students. A library containing Tamil books of science for children will also form part of the Museum.

News from Agril. Varsities

Seminar on the role of KKV in agricultural development of Konkan region

A two-day seminar on "the role of the Konkan Krishi Vidyapeeth in the agricultural development of the Konkan Region" was jointly organised by the All India Radio, Ratnagiri and the Konkan Krishi Vidyapeeth at its campus, Dapoli, as a part of the celebration of the Fourth Anniversary of the Farm and Home programmes of the All India Radio, Ratnagiri. While inaugurating the seminar, Dr. P.V. Salvi, Vice-Chancellor of the University said, "but for achieving the desired agricultural development, missionery zeal on the part of extension workers is expected of, while the scientists, without any feeling of complacency, must intensify their unstinted and steadfast research efforts".

Elaborating the achievements made by the KKV in the fields of Agriculture, Veterinary and Fisheries sciences, the Vice-Chancellor said that despite the university's laudable achievements, we have still to go a long way in finding out the right kind of solutions to many a complicated problems in agricultural production. For this purpose, he appealed to all those concerned to understand sympathetically the problems of the farmers by sharing their feelings. He hoped that the seminar would help in determining the directions of the works to be carried out during the ensuing 15 years of the 2000 A.D.

Papers on the achievements of the KKV in the areas of education, research and extension were presented at the seminar.

More than sixty scientists, Director of Research, Director of Instruction and Director of Farm and Officers drawn from the University and the All India Radio, Ratnagiri, participated in the seminar.

New maize variety developed at PAU

The Department of Plant Breeding of the Punjab Agricultural University has developed a new high-yielding variety of maize, J 115.

According to Dr A.S. Khehra, Senior Maize Breeder at PAU, J 115 variety averages 15 per cent higher yield than the previously recommended varieties. The outstanding features of this new variety are its high resistance against various diseases and lodging.

This variety has also been identified by the All-India Maize Workers Workshop for cultivation in the States of Punjab, Haryana, Rajasthan, parts of Uttar Pradesh, Madhya Pradesh, Andhra Pradesh, Karnataka, Maharashtra and Gujarat. Small kits of the seed of new variety are being supplied as mini-kit trials throughout its area of adoption.

News from Abroad

70,000 foreign students in FRG

According to the latest figures, there are now some 70,000 undergraduates enrolled at the 238 higher education institutions in the Federal Republic of Germany. More than a third of these are women. The most popular disciplines are the Engineering Sciences. No fewer than 18,700 students are reading these subjects. 15,000 are reading Art subjects, especially German Language and Literature, 9,200 Natural Sciences and Mathematics, 11,700 Economic and Social Sciences and 5,200 Medicine. The majority of these foreign students, i.e. about half, hail from European countries—most of whom come from Turkey, Greece, Austria and France. There are no fewer than 7,600 Turks enrolled at German universities and colleges and 5,800 Greeks. A third of the parents of these two ethnic groups live in the Federal Republic of Germany. The largest contingent of non-European students cóme from Asia: Iran (6,100), Indonesia (3,100), Japan (1,200) and South Korea (1,300). There are 4,000 Africans studying in the Federal Republic of Germany. Half of them are Arabs and the other half come from Black African countries. 6,800 come from American countries, 3,600 of whom are US citizens.

[Courtesy: Bildung und Wisseuschaft (BW) 1985]

FRG gives priority for biotechnology

The Government of the Federal Republic of Germany has announced its decision to increase its financial support for research and development in the field of biotechnology. At the convention of the Society of German Naturalists and Doctors in Nuremberg, Federal Research Minister Heinz Riesenhuber (Christian Democratic Union/CDU) stated that biotechnology offered a wealth of opportunities to improve results in agriculture and medicine and to help solve environmental problems. In this connection, prime consideration should be given to the intensification of application-oriented basic research. At the same time, Minister Riesenhuber made it quite clear that the Federal Government would be keeping a very careful eye on the risks involved in genetic technology, i.e. the systematic manipulation of the genes of living creatures—from both an ethical and legal point of view. Care had to be taken, right from the outset, that undesirable developments did not occur in the field of biotechnology.

In a statement the Government said that any experiments aimed at reproducing identical human being were just as unacceptable as experiments designed to produce specific qualities in humans. Minister Riesenhuber underscored, in this connection, that there were sectors of genetechnology, in particular, where the application of scientific know-how would have to be watched with the utmost caution. At the same time, he drew attention to the fact that efforts were being made in almost all industrialized countries to establish focal points in the biotechnological area and to create research capacities to this end.

[Courtesy: Bildung uad Wisseuschaft (BW) 1985]

Fruit bats used for brain rehabilitation in Australia

Neuroscientists at the University of Queensland are using fruit bats to help them in a brain-mapping project which may shed new light on rehabilitation for brain-damaged humans.

The research team, led by Professor Jack Pettigrew, of the university's physiology and pharmacology department, has mapped the exact size and location of brain cells devoted to hearing and touch in Pteropus poliocephalus, the grey-headed flying fox.

The team found the two senses adjoined in the bat's brain, and because humans and bats had similar sensory systems it seemed almost certain that they also adjoined in the human brain, Professor Pettigrew said.

This discovery paves the way for further research by other scientists exploring the possibilities for substituting one sense for another, for example in help-

We Congratulate . . .

(1) Miss Premlata Sharma who has been appointed as Vice-Chancellor of the Indira Kala Sangeet Vishwavidyalaya, Khairagarh.

(2) **Dr. (Mrs) Radha Thiagarajan who has been appointed as Vice-Chancellor of the Alagappa University, Karaikudi.**

ing deaf people to "hear" and blind people to "see" through touch.

The bat brain-mapping project which is being extended to explore the visual senses, would help define the basic principles of rehabilitation, including its limitations and the speed at which these could be achieved.

Sports News

Mr. K.V. Balachander leads combined universities rowing team for Madras Nationals

The following players have been selected to represent Combined Universities Rowing Team for participation in National Rowing Championship to be held at Madras from 1st to 7th July, 1985: (1) Mr. K.V. Balachander (Captain), Madras Univ; (2) Mr. Sanjeev Kesu, Madras Univ; (3) Mr. G. Narayanan, Madras Univ; (4) Mr. Bharath Vijayan, Madras Univ; (5) Mr. Sandeep Somani, Madras Univ; (6) Mr. M.S. Ashwin, Anna Univ; (7) Mr. Ashok Khosla, Anna Univ; (8) Mr. K.V. Sundaran, Anna Univ; (9) Mr. Ramesh Guruswami, Anna Univ; (10) Mr. Khaiser-A-Sheriff, Anna Univ.

Prior to the participation of the team in the National Championship, a coaching camp has been arranged at Madras University from 24th June onwards. Shri M.R. Pandurangam, Asstt. Director, Physical Education, Madras University has been nominated as the manager of the team.

Badminton in 1992 Olympics

Badminton is to become the 24th Olympic Sport—but not until 1992. This decision has been taken by the International Olympic Committee, at its 90th General Assembly Meeting which recently concluded in East Berlin.

Six University players selected as junior World Cup Hockey probables

36 players have been selected to undergo coaching for the 3rd Junior World Cup Hockey Tournament to be held at Vancouver from August 12 to 25, 1985. The following university players have been picked up in the above list of probables:

(1) Naveen Raizada, Goal Keeper; (2) Harender Singh, Full Back; (3) Navjot Singh, Half Back; (4) Tejinder Singh, Half Back; (5) Daljit Singh, Forward; (6) Rupinder Singh Grewal, Forward.

In preparation for the Junior World Cup a series of coaching camps have been arranged by the IHF.

First Camp

June 6 to 29, 1985—NIS, Patiala

Second Camp

July 1 to 27, 1985—NIS, Patiala

Third Camp

July 29 to August 8, 1985—Delhi

News from UGC

UGC Chairman presents Indian books to GDR Ambassador

Dr. (Mrs.) Madhuri R. Shah, Chairman, University Grants Commission presented Indian books numbering about a hundred to Humboldt University, Berlin (GDR) under the Indo-GDR Cultural Exchange Programme. These books were received by Mr. Bernd Biedermann, Ambassador of the German Democratic Republic in India on behalf of Humboldt University.

Speaking on the occasion, Mrs. Shah said that during her visit to GDR, she found the paucity of Indian books in that country. These books, she hoped, will meet some of the requirements of the German scholars.

Mr. Biedermann, thanking the Chairman, hoped that these books would help the German scholars to understand the great country of India, its people and policies.

The books presented covered a wide range of subjects, such as, Indian History, Freedom Movement, Civilization, Culture, Languages, Literature, Philosophy, Religion, Politics, Economics, Industry, Trade and International Affairs and biographies of Leading Indian statesmen.

CALENDAR OF EVENTS

Proposed Dates of the Event	Title	Objective	Name of the Organising Department	Name of the Organising Secretary/Officer to be contacted
July 1-21, 1985	UGC sponsored short-term Institute on Polymer Science/Technology for teachers in Science and Engineering Colleges.	To impart training in theoretical and practical aspects of Polymer Science/Technology to teachers and research Scientists making use of the large facilities possessed by the Department.	Department of Polymer Science & Rubber Technology, University of Cochin, Cochin-22.	Dr. D. Joseph Francis Professor & Head Department of Polymer Science & Rubber Technology, University of Cochin, Cochin-22.
July 29-Aug 24, 1985	UGC Sponsored Summer Institute on "Computer Aided Numerical Analysis and Operations Research".	To familiarize the teachers on the programming languages and their applications; to encourage researchers to take-up real and sophisticated research problems which require computational techniques.	Department of Mathematics & Statistics, University of Cochin, Cochin-22.	Dr. T. Thrivikraman Department of Mathematics & Statistics, University of Cochin, Cochin-22.
August 5-Nov 29, 1985	Course on Remote Sensing and its applications to various-themes such as Water resources, Mineral resources, Terrain evaluation and Land use planning	To train middle level in-service engineers and scientists in the area of fundamentals of satellite remote sensing and its application	Centre of Studies in Resources Engineering, I.I.T. Bombay.	Dr T.V. Pavate, Chief Project Engineer, Training Extension and Project Cell, I.I.T., Bombay.
September 9-12, 1985	UGC Sponsored All India Symposium on Recent Trends in Insect Endocrinology	—	Department of Zoology, Govt. College, Ajmer.	Shri J.N. Mathur, Director
September 26-28, 1985	UGC Sponsored National Seminar on "Behaviour Modification and Mental Health"	To investigate efficacy of suitable Behaviour Modification teachings in our Culture and Application of Behaviour Modification teachings in different areas of Mental Health.	Deptt. of Psychology, Dayalbagh Educational Institute, Agra.	Dr. (Miss.) S.P. Sinha, Reader & Head, Deptt. of Psychology.
November 28-29, 1985	**International Conference on New Technologies in Higher Education**	**To assess the possibilities of the now available new technologies in the background of the broad social and cultural context and the state and trends of Higher Education in India and other developing countries**	**Association of Indian Universities, IIT/Delhi, JNU, Jamia Millia and University of Delhi**	**Prof. Tapas Mazumdar (JNU), Prof. S. Shukla (Jamia Millia), Prof. L.R. Shah (JNU)**
December 12-14, 1985	Asia Pacific Symposium on Wind Engineering	Nature of wind and effect on structures and study of damage and its socio economic implications	Civil Engg. Department, University of Roorkee, Roorkee	Dr. S. K. Pathak, Organising Secretary
December 16-18, 1985	Indian Geotechnical Conference	To advance the state of knowledge about the geotechnical engineering and to give definite direction to the future research work	Earthquake Engg. Department, University of Roorkee, Roorkee	Dr. V. H. Joshi, Organising Secretary

INSTITUTE OF AGRICULTURAL SCIENCES

BANARAS HINDU UNIVERSITY

VARANASI - 221005.

ADMISSION NOTICE FOR M.Sc. (Ag.) COURSE FOR 1985-86 SESSION

Applications are invited for admission to M.Sc. (Ag.) courses in the following subjects:—

1. Agricultural Economics;
2. Agronomy;
3. Animal Husbandry and Dairy Science;
4. Entomology and Agricultural Zoology;
5. Extension Education;
6. Genetics and Plant Breeding;
7. Horticulture
8. Mycology and Plant Pathology;
9. Plant Physiology; and
10. Soil Science and Agricultural Chemistry.

M.Sc. (Ag.) course shall be open to those who have passed B.Sc. (Ag.) of this University or an equivalent examination. Students of B.Sc. (A.M.), B.Sc. (Dairying), B.V Sc. and A.H. and B.Sc. (Animal Husbandry) may also be considered on merit for admission to M.Sc. (Ag.) course in Animal Husbandry and Dairy Science subject to a maximum of 10% quota of seats and a minimum of one. Candidates with B.Sc. (Botany, Zoology and Chemistry) may also be admitted on merit to such of the courses where possible, subject to a maximum of 10% quota of seats and a minimum of one.

Non-Agricultural students, namely, those holding B.Sc. (A.H.), B.Sc. (Dairying), B.V.Sc. and A.H., B.Sc. (Animal Husbandry), B.Sc. (Botany, Zoology and Chemistry) degree shall be required to offer a minimum of 15 additional credits of remedial courses outside the parent department, over and above the credits prescribed for the M.Sc. (Ag.) courses.

Applicants from course credit stream must have secured a minimum OGPA of 2.5 out of 4 or 3.5 out of 5 and an aggregatr 'B' grade in the concerned subject to which admission is sought. Applicants from traditional stream must have secured minimum of 45% marks in the aggregate and 50% marks in the concerned subject. Those not meeting eligibility conditions shall not be considered for admission.

Notwithstanding the above, the admission of scheduled castes/scheduled tribes candidates shall be made, on merit from amongst themselves, within the quota of seats reserved for them (15%+7.5% respectively), provided they have passed the qualifying examination.

The prescribed application form and other details can be obtained from the Director's Office, Institute of Agricultural Sciences, Banaras Hindu University, Varanasi-221 005, on payment of Re. 1 at the counter between 11.00 and 14.30 Hours or by sending Rs. 1.30 paise stamped self-addressed envelop of 23cm.×10cm. size alongwith an Indian Postal Order of Re. 1 duly crossed and drawn in favour of the Assistant Registrar, Institute of Agricultural Sciences, Banaras Hindu University, payable at the Malaviya Nagar Post Office, B.H.U. **Money Orders or Cheques will not be accepted.**

The sale of forms at the counter will commence from **Monday the 8th July, 1985.** The last date for receiving requisition for sending forms by post is **Monday, the 22nd July, 1985**. Forms can, however, be obtained from the Institute's Office Counter till **Friday the 16th August, 1985.**

Candidates whose results for the 1985 qualifying examination have not been declared may also apply by the last date. They should submit attested copies of marksheet within 10 days of the declaration of results or earlier but before the last date for closing of admission.

THE FORM IS NOT TRANSFERABLE. SEPARATE APPLICATION FORM IS REQUIRED TO BE FILLED FOR EACH SUBJECT TO WHICH ADMISSION IS SOUGHT. Incomplete applications will not be considered. Hostel accommodation is not guaranteed.

The application form duly completed should reach the office of the concerned Head of the Department, Institute of Agricultural Sciences, Banaras Hindu University, Varanasi-221005, on or **before Saturday, the 17th August, 1985.**

DIRECTOR

AIU Library

Established in 1965, the AIU Library has acquired over the years a valuable collection of books and documents on Higher Education. Among the topics prominently represented are Educational Sociology, Educational Planning, Educational Administration, Teaching & Teachers' Training, Examinations, Economics of Education and Country Studies, Developing fields of Adult Education, Continuing Education and Distance Education, and Educational Technology are also well stocked. The Library is particularly strong in its collection of reports whether they are on the setting up of different universities or on the state of Higher Education. Files of Annual Reports of different universities are also maintained. Readers are kept informed of the latest acquisitions through our column 'Additions to AIU Library'.

The Library also receives about a 100 periodical titles on Higher Education. All these are indexed regularly and a select list appears every month as 'Current Documentation in Education'.

Doctoral Degrees awarded during the preceding month are reported as 'Theses of the Month' while registrations made for such degrees are flashed as 'Research in Progress'. Bibliographies are also compiled and supplied on demand.

Research scholars and students of education are welcome to use these resources. The Library is situated at 17-B, Indraprastha Marg, New Delhi-110 002. It is open from 9.30 a.m. to 5.30 p.m. Monday through Friday. Access can also be had through inter library loan for which requisition must be made through your Librarian.

THESES OF THE MONTH

A list of Doctoral Theses Accepted by Indian Universities

BIOLOGICAL SCIENCES

Biochemistry

1. Sukthankar, Sandhya Prabhakar. *Effect of soyabean protein on lipid metabolism.* Nagpur U.

Microbiology

1. Gaddad, S.M. *Studies on enzymes in relation to microbial growth and activity in sewage and stabilization ponds.* Gulbarga U.

2. Palejwala, Vaseem Anavarali. *Studies on hormonal control of fruit ripening and microbial spoilage of Mangoes.* MSU, Baroda.

Botany

1. Adikesavulu Naidu, R. *Certain aspects of photosynthesis and related events in peanut green mosac virus (PGMV) iufected groundnut, Arachis hypogaea L. leaves.* SVU, Tirupati.

2. Agrawal, Kalawati. *Studies on the nutritional physiology of some phytopathogenic fungi.* RDV, Jabalpur.

3. Bharali, Niren. *Investigations on the growth and development of muga worm, antheraea assamensis Westwood on different morphophysiotypes of som plant, Machilus bombycina king and chemical and analysis of leaves and hormone treatments of seeds to select the best variety of plants.* Dibrugarh U.

4. Bhave, Vijaya. *Studies on leaf-litter decomposing fungi of some dry deciduous forest trees.* RDV, Jabalpur.

5. Dixit, Vijaya Padmakar. *Palaeobotanical studies of the Deccan intertrappeans.* Nagpur U.

6. Lokeshwar Reddy, M. *Mutagenic studies on vegetatively propagated ornamental perennial Portulaca grandiflora Hook.* OU, Hyderabad.

7. Manohar Rao, D. *Studies on induction of mutations in some varieties of Cajanus cajan L.* OU, Hyderabad.

8. Mohanty, Santosh Kumar. *Physiology of rice tungro virus disease.* Utkal U.

9. Pandey, Ramesh Prasad. *Influence of malcic hydrazide and nitrogen levels on the storage of onion (Allium cepal).* APSU, Rewa.

10. Pandey, Rameshwar Prasad. *Determination of physiological parameters in relation to yield and quality of cowpea, Vigna sinensis (L).* RDV, Jabalpur.

11. Patolia Jinalal, Shambhubhai. *Varietal responses of wheat to seawater irrigation.* Bhavnagar U.

12. Singh, Praveen. *Ecological studies of dischanthium-annulatum (Forsk) stapf Eragrostis gangetica with special reference to effect of cement dust pollution.* APSU, Rewa.

13. Wagley, Sunil Kumar. *Cytogenetical studies in certain cultivars of croton, codiaeum variegatum blume.* Kar U, Dharwad.

Zoology

1. Ajithakumar, B.S. *Reproductive philosophy of Indian species of the genus: Perna, Family-mytilidae.* U Cochin.

2. Chattopadhyay, Soma. *A haematological study of some fresh and salt water fishes of India.* U Calcutta.

3. Changamma, C. *A comparative study on the effects of gossypol, 5-thio-D-glucose estradiol-17 and prostaglandin F on testicular metabolism in albino rats.* SVU, Tirupati.

4. Cherian, Susamma. *Glycogen degrading enzymes and their regulation in Benthic animals and esturaine fish.* U Cochin.

5. De, Tapan Kumar. *Studies on biology of reproduction in malesoft shelled turtle (Lissemyapunctata-punctata).* U Calcutta.

6. Johri, Neera. *The role of adrenal steroids on initiation maturation and maintenance of reproductive functions in the male rat.* U Delhi.

7. Kasi Reddy, B. *The possible metabolic diversions in the nitrogen metabolism adapted by freshwater mussel, Lamellidens marginalis (Lamarck) under short term methyl parathion stress.* SVU, Tirupati.

8. Khandekar, Keshao Namdeorao. *Some aspects of endocrine regulation of sodium and potassium metabolism in lizard, Calotes versicolor Daudin.* Nagpur U.

9. Masthanamma, P. *Aspects of metabolism of the fresh-water bivalves, Lammellidens marginalis (Lamarck) and Parreysia rugosa (Gmelin) in relation to altered PH of the medium.* SVU, Tirupati.

10. Mathur, Sugita. *Biochemical studies on reproduction in the male fresh water carb, Barytelphusa guerini,* OU, Hyderabad.

11. Patel, Meena Manubhai. *Pineal in relation to breeding and carbohydrate metabolism, histophysiological studies in domestic and wild pigeons, Columbia livia.* MSU, Baroda.

12. Pateria, Krishna. *Studies on the inter-relationships between the fauna and the wheat crop in particular area at Jabalpur.* RDV, Jabalpur.

13. Radha Krishna, Gudapati. *Studies on some aspects of ecology of ciliates associated with algae of Visakhapatnam Coast.* Andhra U, Waltair.

14. Rajkumar, E.D.M. *Some biochemical studies on toxic action of Parthenium hysterophorus weed extract in select animals and plants.* SVU, Tirupati.

15. Sankaravara Prasad, B. *Impact of larval trematode infection on the sugar and amino acid transport by the snail host, Lymnaea luteola (Lamarck) : A tracer study.* SVU, Tirupati.

16. Sivaramma Prasad Rao, Kaduri. *Studies on the respiration of the intertidal rock pool fishes Blonnius steindachneri (Day) and Abdudefduf sordidus (Forskal) of Visakhapatnam Coast.* Andhra U, Waltair.

17. Shrivastava, Onkar Singh. *Importance of native insect pollinators in the pollination of sunflower (Helianthus annuusl).* APSU, Rewa.

18. Unnikrishnan Nair, N. *Studies on the backwater oyster, Crassostrea madrasensis (Preston) of Cochin harbour.* U Cochin.

19. Varinder Pal Singh. *Effect of some insecticides on the liver, blood serum and gonads of the fresh water teleost. Channa punctatus: A biochemical study.* PAU, Ludhiana.

20. Vanajakshmma, B. *Neurophysiological and cardiological studies on the scorpion, heterometrus fulvipes (C. Koch) with special reference to autoenvenomation.* SVU, Tirupati.

Medical Sciences

1. Chattopadhyay, Jaya. *Tumour associated antigen in marine mammary tumour and its relation to the human breast Carcinoma,* U Calcutta.

2. Gulab Rani. *Genetic hazards of anaesthesia.* OU, Hyderabad.

3. Jayaraman, G. *Modulation of carcinogenic and anti-cancer drug interaction patterns by radiation in simple cell systems.* JNU, New Delhi.

4. Jaharul Haque. *Bio-chemical studies on the action of pharmacologic drugs in mammalian system.* U Calcutta.

5. Satyanarayana Murthy, Suripeddi. *Development of some new methods for the estimation of antitubercular and other drugs and their dosage forms.* Andhra U, Waltair.

Agriculture

1. Amarjit Singh. *Indexing maturity and improving yield of groundnut through genotypes, environment modifications and chemicals.* PAU, Ludhiana.

2. Amrik Singh. *Studies on the infusion and injection of systemic insecticides for the control of insect pests of Magnifera indica Linn and Ficus retusa Linn.* PAU, Ludhiana.

3. Balbir Singh. *Yield and quality of sugarbeet as influenced by irrigation, nitrogen, sowing date and planting pattern.* PAU, Ludhiana.

4. Basawani, Maruti Joi. *Investigations on tomato spotted wilt virus.* MP Krishi, Rahuri.

5. Chutia, Rabindra Nath. *Effect of pyrites and FYM amended phosphatic fertilizers on quantity, intensity, supply parameters and release of phosphorus in relation to phosphorus nutrition of wheat in calcareous soil.* RRAU, Samastipur.

6. Devinder Singh. *Weed management in arhar, Cajanus cajan L. Millap.* PAU, Ludhiana.

7. Hooda, Ishwar Singh. *Effect of irrigation, weedicide and fertility levels on growth, yield, water-use efficiency and control of wild canary grass in wheat.* HAU, Hissar.

8. Mishra, Sundareshwar. *Production potential economics energetics and soil fertility dynamics of some high intensity upland rotations under fertilizer constrainits in North Bihar.* RAU, Samastipur.

9. Pandey, Raghubar Dayal. *Nutritional interrelationships of phosphorus and zinc and its effect on the growth development, yield and quality of rabi hybrid maize.* RAU, Samastipur.

10. Sharma, Uttam Chand. *Use of plant analysis in determining critical concentration of nutrients and predicting their requirements for potato, solanum tuberosum L.* PAU, Ludhiana.

11. Shekhar, Jahnvi. *Effect of agronomic manipulation of some-monetary inputs on performance of two rice varieties in Kangra Valley of Himachal Pradesh.* HP Krishi, Palampur.

12. Yadav, Kameshwar. *Biodegradation of some organic manures in soil in relation to mineralization, mumus constitution and microbial population.* RAV, Samastipur.

Veterinary Science

1. Chaudhary, Indra. *Genotoxic effect of certain agricultural chemical in laboratory mice and cultured buffalo lymphocytes.* HAU, Hissar.

2. Jha, Ashok Bihari. *Studies on genotype environment interactions for broiler traits.* RKU, Bareilly.

3. Kaushish, Satish Kumar. *Physiological responses of Beetal and Black Bengal breeds of goat to thermal stress.* HAU, Hissar.

4. Singh, Vijai Pratap. *Studies on the bovine leukemia virus with particular reference to its experimental transmission.* RKU, Bareilly.

5. Tika Ram, Samual M. *Studies on the incidence and control of Sarcoptic mange in buffaloes with some systemic insecticides.* HAU, Hissar.

D.N. JAIN COLLEGE OF COMMERCE & ARTS
JABALPUR

WANTED

Applications are invited for the following permanent posts :

(1) One Lecturer in English
(2) One Librarian
(3) One P.T.I
(4) Two Clerks and one Book Lifter

Scale of Pay and qualifications as laid down by U.G.C.

Details of the posts and application forms for posts 1, 2 & 3 can be had from the undersigned on payment of Rs. 10 and posts under 4 on payment of Rs. 5 each in cash or by crossed postal order in the name of undersigned up to 5-7-85. Last date for receipt of applications 25-7-85.

Note : Preference may be given to experienced candidates.

PRINCIPAL

CURRENT DOCUMENTATION IN EDUCATION

A list of select articles culled from periodicals received in AIU Library during May, 1985

EDUCATIONAL PSYCHOLOGY

Jindal, G.R. and Gupta, Vijay Kumar. Sixteen measurable academic motivation : A differential study of rural and urban students. *Indian Ednl Rev* 19(4), 1984, 19-26.

Ott, Mary Diederich, etc. Logit analysis of graduate student retention. *Res Hr Edn* 21(4), 1984, 439-60.

Perrin, Jacques. *The production of know-how and obstacles to* its transfer. *Prospects*, 14(4), 1984, 479-88.

Saxena, Saroj. A study of need achievement in relation to creativity, values, level of aspiration and anxiety. *Indian Ednl Rev*. 19(4), 1984, 65-71.

EDUCATIONAL SOCIOLOGY

Baird, Leonard L. Relationships between ability, college attendance and family income. *Res Hr Edn* 21(4), 1984, 373-95.

Bean, John P. and Kuh, George D. The reciprocity between student-faculty informal contact and academic performance of university undergraduate students. *Res Hr Edn* 21(4), 1984, 461-77.

Yadav, S.K. Awareness studies about educational schemes amongst scheduled castes : A research review. *Indian Ednl Rev* 19(4), 1984, 90-4.

EDUCATIONAL PLANNING

Crossley, Michael. The role and limitations of small-scale initiatives in educational innovation. *Prospects* 14(4), 1984, 533-40.

Inbar, Dan. Educational planning problems, decision-making and communication. *Prospects* 14(4), 1984, 489-95.

Krishna Kumar. Quality over access : Responding to the demand of the elite. *EPW* 20(22), 1985, 948-50.

Ruhela, Satya Pal. Making of our new education policy. *Univ News* 23(16), 1985, 2-3.

CURRICULUM

Dunham, Robert E and Gleason Maryellen. Challenges of the introductory course. *New Directions Teaching & Learning* (20) 1984, 39-52.

Gregory, Marshall W. What should introductory course do? *New Directions Teaching & Learning* (20) 1984, 25-38.

McCauley, Robert N. Knowledge, mind and facts. *New Directions Teaching & Learning* (20) 1984, 53-62.

Sagar, B.M. Abuse of English in our colleges. *J. Indian Edn* 10(3), 1984, 35-42.

TEACHING

Pandit, Ira. Linguistics and foreign language/second language teaching. *J Indian Edn* 10(3), 1984, 10-16.

Singh, Gita. A comparative study of different strategies of integration of teaching skills. *Indian Ednl Rev* 19(4), 1984, 48-53.

EDUCATIONAL TECHNOLOGY

Sharma, Motilal and Tripathi, C.K. Radiovision in science education : Some explorations. *Indian Ednl Rev* 19(4), 1984 78-83.

EVALUATION

Deshpande, Shashikala and Kumbar, S.G. Effectiveness of need-based home work and traditional home work on the achievement of underachievers. *Indian Ednl Rev* 19(4) 1984, 95-9.

ECONOMICS OF EDUCATION

Chishti, Salim. Economic costs and benefits of educating foreign students in the United States. *Res Hr Edn* 21(4), 1984, 397-414.

Datta, R.C. Education and the distribution of earnings: The maintenance of the status quo. *Artha Vijnana* 27(1), 1985 1-20.

Kone, Zobila. The ways in which technology is imported and their effects on employment and training : The case of the Ivory Coast. *Prospects* 14(4), 1984, 509-21.

Saraf, S.N. Financial resources: Dimensions and dilemmas. *Univ News* 23(19), 1985, 2-6.

Weiler, Hans N. The political economy of education and development. *Prospects* 14(4), 1984, 467-77.

ADULT EDUCATION

Hussain, M.A. Continuing education and its role in human resources development in India. *Indian Ednl Rev* 19(4), 1984, 36-47.

Murthy, N.V.K. Mass media and non-formal education. *Mainstream* 23(40), 1 June 1985, 11-12.

COMPARATIVE EDUCATION & COUNTRY STUDIES

DEVELOPMENT OF higher education into the 1990s. *THES* (655), 1985, 8-9.

Parkins, Geoffrey, Chinese funding change. *THES* (655), 1985, 12.

Saraf, S.N. Education for All : Dimensions and dilemmas *Univ News* 23(21), 1 June 85, 2-5.

Thelin, John R. Cliometrics and the colleges : The campus condition, 1880 to 1910. *Res Hr Edn* 21(4), 1984, 425-37.

INSTITUTE OF SOCIAL SCIENCES

AGRA UNIVERSITY

AGRA-282004

ADMISSION NOTICE, 1985

Applications are invited for admission to the following two year regular courses in the Institute.

1. M.A. (Alternative Course) in Sociology
2. M.S.W. (Master of Social Work)
3. M. Stat. (Master of Statistics)

The M.A. and M.Stat. courses are designed mainly for students who wish to enter a research career subsequently. The M.S.W. course provides a professional training for careers as trained social workers in labour, rural, medical and psychiatric social work. Minimum qualifications are a Bachelor's/Master's degree with 45% marks.

Last date for receipt of applications is July 15, 1985. Applicants whose results have not been declared should also apply before the **15th of July, 1985**. They will be considered for provisional admission which will be finalised after Bachelor's/Master's degree examination results are available.

Applications received after the last date will not be entertained.

Admission to M.A. and M.Stat. will be on the basis of an interview. Admission to M.S.W. will be on the basis of an admission test and interview. (See prospectus for details).

Application forms and prospectus can be obtained from the Institute office on payment of Rs. 6/- (Rs 10.00 if desired by post). Payment should be made in cash, or by M.O./P.O. payable to the Director, Institute of Social Sciences, Agra University, Agra-282004. Complete postal address is required in capital letters.

DIRECTOR

UNIVERSITY OF POONA

Centre of Advanced Study in Sanskrit

Applications are invited for the award of Research Associateships in the Centre of Advanced Study in Sanskrit, University of Poona, so as to reach the Director, Centre of Advanced Study in Sanskrit, not later than 15th July, 1985.

1. Two Research Associateships in the scale of Rs. 700-40-1100 (Tenure posts) plus allowances as per University Rules.

The prescribed form of application can be had from the Registrar, University of Poona, Pune-411 007 on payment of Rs. 10 plus Rs. 1.50 postage.

S.P. Bhosale
REGISTRAR

SAMBALPUR UNIVERSITY

JYOTI VIHAR : BURLA

Advertisement No. 8970/Estt. II

Dated : 1-6-85

Applications are invited in the prescribed forms for the following teaching posts. Seven copies of application forms alongwith instructions can be had from the University Office on cash payment of Rs. 25/- (Rupees twenty five only) in person or furnishing by post (a) Bank Draft of Rs. 25/- (Rupees Twenty five only) to be drawn in favour of Finance Office, Sambalpur University payable at United Commercial Bank, Katapali and (b) a self addressed envelope (23 cm × 10 cm) affixed with stamp worth postage Rs. 5.05 p. superscribed with the words "APPLICATION FORM FOR TEACHING POSTS IN SAMBALPUR UNIVERSITY' on it.

MONEY ORDER/CHEQUE/I.P.O. WILL NOT BE ENTERTAINED

Completed applications alongwith attested copies of certificates and marksheets should reach the undersigned on or before **10-7-85** at the latest. Candidates staying abroad may apply on plain paper with their bio-data in triplicate within the last date stated above.

The candidates may be required to appear for an interview before a Selection Committee at their own expense. Candidates staying abroad may be considered for appointment in absentia on request.

This advertisement is not binding on the University to make the appointments.

(A) P.G. DEPARTMENTS, SAMBALPUR UNIVERSITY

1. Professor	— 4 (Four)	(One each in Oriya, History, Library and Information Science and Sociology)
2. Reader	— 6 (Six)	One each in Chemistry, Life Sciences, Statistics, Sociology, Earth Science (Geology) and History
3. Lecturer	— 8 (Eight)	Life Sciences-2, English-1 (temporary-likely to be permanent), Mathematics-2. One each in History, Library & Information Science and Home Science (Temporary)

(B) DEPARTMENT OF LAW

Professor — 1 (One)
Reader — 2 (Two)
Lecturer — 3 (Three)

(C) UNIVERSITY COLLEGE OF ENGINEERING: BURLA

1. Reader	— 2 (Two)	(One each in Mathematics, and Electrical Engineering).
2. Workshop Superintendent—1 (One)		
3. Lecturer 8 (Eight)		Three each in Electrical Engineering and Electronics Telecommunication Engineering, Two in Mechanical Engineering.

(D) SPECIALISATION FOR TEACHING POSTS

Sl. No.	Subject	Post	Number of Vacancies	Specialisation
	(A) UNIVERSITY P.G. DEPARTMENTS			
1.	Life Sciences	Reader	One	
	-do-	Lecturer	One	Development Biology
	-do-	Lecturer	One	—
2.	Chemistry	Reader	One	—
3.	Statistics	Reader	One	—
4.	Mathematics	Lecturer	Two	—
5.	Anthropology and Sociology	Professor	One	Sociology
		Reader	One (Temporary, likely to be permanent))	Sociology
6.	Earth Science	Reader	One	Geology
7.	Oriya	Professor	One	—

8. English	Lecturer	One (temporary, likely to be permanent)	—
9. History	Professor	One	Ancient Indian History & Archaeology
	Reader	One	—
	Lecturer	One	—
10. Home Science	Lecturer	One (Temporary)	—
11. Library and Information Science	Professor	One	—
	Lecturer	One	—
(B) DEPARTMENT OF LAW			
1. Law	Professor	One	—
	Reader	Two	—
	Lecturer	Three	—
(C) UNIVERSITY COLLEGE OF ENGINEERING : BURLA			
1. Engineering	Reader	One	Electrical Engineering.
	Lecturer	Eight	(Two in Mechanical Engineering. Three each in Electrical and Electronics & Telecommunication Engg.).
2. Workshop Supdt.		One	—
3. Mathematics	Reader	One	Applied Mathematics

Note :

(1) The number of vacancies is tentative but likely to be altered depending upon the actual number of vacancies at the time of interview.

(2) Master's degree in the subject concerned would include M.Sc. (Zoology) M.Sc. (Botany) and M.Sc. (Life Sciences) for the School of Life-Sciences, M.A. (Sociology) or M.A. (Anthropology and Sociology) for the department of Anthropology & Sociology. Candidates having the necessary stream of specialisation are required to apply for the posts.

REGISTRAR

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* Minimum requirements for admission to each course, duration and the subjects of study for each course;
* Names of Professors and Readers/Assistant Professors together with their academic titles department-wise;
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ASSOCIATION OF INDIAN UNIVERSITIES
AIU HOUSE, 16 Kotla Marg, New Delhi 110002

HARYANA AGRICULTURAL UNIVERSITY

Advertisement No. 4/85

Applications invited for following posts on the prescribed form obtainable from Assistant Registrar (Faculty), H.A.U. Hissar by sending self-addressed unstamped envelope size 23x10cms alongwith Indian Postal Order of Rs. 2/- in the name of Assistant Registrar (General). Candidates already in service must apply through proper channel. Applications complete in all respects accompanied by a fee of Rs. 20/- for post at Sr. No. 1 and Rs. 15/- for remaining posts, in the form of Indian Postal Order in the name of Assistant Registrar (General), payable at HAU Post Office, Hissar should reach the Registrar by 16-7-1985 (30-7-1985 for candidates residing abroad) except post at Sr. No. 3 for which last date for receipt of applications is **3-7-85**. Incomplete applications and those received late will not be considered. Benefits of Contributory Provident Fund and leave etc. admissible as per University Rules. The applicants must possess prescribed qualifications and experience on the last date for receipt of applications. However, those who have submitted their thesis (Master's/Doctorate's level) by the last date of receipt of applications are also eligible to apply. The date of submission of thesis must be supported by a certificate duly signed by the concerned authority of the Institution. They will be considered by the Selection Committee only if they produce the completion certificate of Master's/Doctorate degree at the time of interview. The envelope containing application must be superscribed as "APPLICATION FOR THE POST OF——————."

1. **Professor in Physical Education:** (One) : (i) Second class BSH & PE/B.A.+D.P.E./B.P.E. (ii) Second class Master's degree in Physical Education. (iii) Diploma/Certificate in Coaching from any recognised Institute in Gymnastic/Handball. (iv) Ph.D. in Physical Education with ten years experience in teaching/research including five years as an Associate Professor in Physical Education. OR 20 years experience in teaching/research including five years as an Associate Professor in the field of Physical Education and Sports.

2. **Assistant Professor in Physical Education (Handball) :** (One) : (i) Second class BSH & PE/B.A.+DPE/BPE. (ii) Ist class Master's degree in Physical Education or 2nd class Master's degree in Physical Education with two years experience in Physical Education/Sports. (iii) Diploma/Certificate in Coaching from any recognised Institute in Handball.

3. **Assistant Professor in Physical Education (Gymnastics) :** (One) : (Reserved for Scheduled Caste) (i) Second class BSH&PE/B.A.+DPE/BPE. (ii) Ist class Master's degree in Physical Education or 2nd class Master's degree in Physcial Education with Two years experience in Physical Education/Sports. (iii) Diploma/Certificate in Coaching from any recognised Institute in Gymnastics.

Note

1. For post at Sr. No. 1, the minimum experience of 10 years (including 5 years as an Associate Professor) is required. This experience will be counted after a candidate obtains his Master's degree. Further a period of 3 years towards obtaining Ph.D. degree shall be excluded from the experience.
2. The qualifications regarding experience are relaxable at the discretion of the competent authority in the case of candidates belonging to the Scheduled Castes or Scheduled Tribes, if at any stage of selection sufficient number of candidates from those communities possessing the requisite experience are not likely to be available to fill up the vacancies reserved for them.

Pay Scales

Sr. No.	Pay scale of post	Total emoluments at the initial of the pay scale (exclusive of House Rent)
1.	Rs. 1500-60-1800-100-2000-125/2-2500	Rs. 2820/-
2.	Rs. 700-40-1100-50-1600	Rs. 1706/-

REGISTRAR

GURU NANAK DEV UNIVERSITY

AMRITSAR

Advertisement No. 8/85

Applications are invited for the following posts on prescribed forms obtainable from the Secretary to the Vice-Chancellor by making a written request accompanied by a self adressed envelope of 23×10cms. so as to reach the Vice-Chancellor by **10-7-1985** alongwith crossed Indian Postal Order for Rs. 10/- (not refundable) drawn in favour of the Registrar, Guru Nanak Dev University, Amritsar. Persons who have already applied for these posts in reference to advertisement No. 13/83 need not apply again.

Persons already in employment must send their applications through their employers. Higher start in the grade may be given depending upon qualifications and experience.

1. **Registrar :** (Grade : Rs. 1775-75-2000/100-2400+Rs. 100/- as special pay).

Terms and conditions relating to appointment and functions of the Registrar are as contained in the Act and Statutes of this University.

2. **Controller of Examinations:** (Grade : Rs. 1775-75-2000/100-2400)

Qualifications

1. **Registrar :** Master's degree of a recognized University or its equivalent qualification with at least 10 years teaching/administrative experience in a responsible position. Knowledge of Punjabi upto Matric standard is essential'

2. **Controller of Examinations** : Master's degree of a recognised University or its equivalent qualification with at least 10 years teaching/administrative experience in a responsible position. Knowledge of Punjabi upto Matric standard is essential. Knowledge of examinations system is required.

SECRETARY TO THE VICE-CHANCELLOR

RANI DURGAVATI VISHWAVIDYALAYA

JABALPUR

No. Estt./85/467

Dated : 30-5-85

Applications in the prescribed form (in 8 copies) are invited for the following posts so as to reach the undersigned on or before **15-7-1985.**

(1) One Professor in English in the Scale of Pay Rs. 1500-60-1800-100-2000-125/2-2500 plus admissible allowances.

(2) One Director of Adult and Continuing Education and Extension work in the Scale of Pay Rs. 1500-60-1800-100-2000 plus admissible allowances. Temporary post sanctioned upto 31-3-90. If a Professor holding a substantive post is selected from this University he/she will be permitted to carry the scale and salary and other benefits.

(3) The minimum essential qualifications for these posts are the same as are prescribed by the University Grants Commission.

(4) The prescribed application forms (in 8 copies) together with details of qualifications, experience, etc. can be obtained from the undersigned on payment of Rs. 5/- in person or by sending a crossed postal order of Rs. 5/- payable to the Registrar, Rani Durgavati Vishwavidyalaya, Jabalpur. The candidates who desire to get the application form by Registered post (not by ordinary post) should send an additional amount of Rs. 5/- by postal order for postal expenses.

(4) The University reserves the right to fill in or not to fill in any post and also to call any candidate for interview.

R.N. Tripathi
REGISTRAR

UNIVERSITY NEWS, JUNE 23, 1985 Regd. No. R. N. 7180/63 Post Regd. D(C) 1086

MADURAI KAMARAJ UNIVERSITY

Advertisement No. 1/V/Advt./85

Applications are invited in the prescribed form for the following posts in the University so as to reach the undersigned on or before **15-7-1985**. (15th July 1985).

Department	Post	No. of posts	Area of specialisation
I. BIOLOGY	1. Professor	One	Plant Sciences (with specialisation in Ultrastructure)
	2. Professors/ Readers	Five	(i) Plant Molecular Biology (ii) Genetic Engineering (iii) Chemical Engineering (iv) Eukaryotic Gene Cloning (v) Genetics
	3. Reader	One	Molecular Biology
	4. Readers (Subject Specialists)	Three	(i) Plant Sciences (ii) Animal Sciences (iii) Any inter-disciplinary/ new areas in Life Sciences such as Microbiology, Biochemistry, Biophysics etc.
	5. Reader	One	Plant Sciences (with specialisation in Tissue Culture)
	6. Lecturer	One	Genetic Engineering
	7. Technical Officer (Lecturer's grade)	One	Electron Microscopy
	8. Lecturer	One	Molecular Biology
II. CHEMISTRY	1. Professor (to work at PG Extension Centre, Tirunelveli)	One	
	2. Reader	One	in Terpemoids, alkaloids, carbohydrates or polypeptides
III. COMPUTER CENTRE	1. Reader	One	in Computer Science & Applications
	2. Lecturers	Two	-do-
IV. EDUCATION	1. Reader	One	in Educational Technology/ basic degree in bio-sciences.
V. ENGLISH	1. Reader	One	With proficiency in Hindi/ Sanskrit.
VI. FRENCH	1. Reader (Temp.)	One	
VII. GURUNANAK DEVJI CHAIR	1. Reader	One	in Gurunanak Devji Studies.
	2. Lecturer	One	-do-
VIII. HISTORY	1. Professor	One	in Ancient History
IX. LIBRARY SCIENCE	1. Professor	One	
	2. Lecturers	Two	
X. MANAGEMENT STUDIES	1. Reader	One	in Management training/consultancy & active involvement in professional associations in management.
XI. MATHEMATICS	1. Professors	Three	with specialisation (i) in Algebra/Analysis (ii) in Algebra preferably commutative Algebra, Algebraic Geometry. (iii) in Analysis.
	2. Reader	One	with specialisation in Algebra preferably commutative Algebra, Algebraic Geometry.
XII. SOCIOLOGY	1. Professor	One	in Rural Sociology & Rural *Development
	2. Readers	Two	
	* to work at PG Extension Centre, Tirunelveli.		
	3. Research Assistant	One	in Medical Sociology
XIII. TAMIL	1. Reader	One	
XIV. UNIVERSITY SERVICE & INSTRUMENTATION CENTRE	1. Jr. Scientist	One	

1. Appointment of persons on deputation will also be considered, if the candidates are found suitable and the employer is agreeable to spare the services.
2. The rules of reservation for Open Competition, Backward classes, Scheduled Castes and Scheduled Tribes will be followed for each category of teachers in the University.
3. The Syndicate also reserves the right (i) to decide on the reservations for the particular department for each post (ii) to receive nominations from Vice-Chancellors and experts on behalf of senior teachers (iii) to fill up consequential vacancies, if any, and (iv) to relax the qualifications prescribed for any post for which there is a dearth of suitably qualified candidates.
4. The prescribed form of application (in 8 copies) and full details regarding qualifications and experience required can be got from the undersigned on requisition accompanied by (1) a self-addressed envelope with postage stamps to the value of Rs. 2/30 ps. affixed thereon and (2) a State Bank of India Challan for Rs. 10/- (Account No. 1 of the Madurai Kamaraj University) or Demand Draft for Rs. 10/- payable at Madurai drawn in favour of the REGISTRAR, MADURAI KAMARAJ UNIVERSITY, MADURAI-625021.
5. Money Orders and Postal Orders will not be accepted.
6. The number of the notification should be quoted in the requisition i.e. No. 1/V/Advt./85.
7. Details of qualifications, specific specialisations and experience prescribed in respect of the above posts (including the particulars and precise branch of specialisation which is needed and also the preferential qualifications considered desirable) will be furnished alongwith the application form.

P.P. Chinnadurai
REGISTRAR

PANJAB UNIVERSITY
CHANDIGARH

Pre-Entrance Test 1985
Notification

1. **Corrigendum :** Rule 5(a) printed on page 1 of the Prospectus/Information brochure for P.E.T. 1985 be read as under:—

"Only those applicants will be eligible for the Pre-Entrance Test whose results are available **before the last date fixed for receipt of admission forms and fees**".

2. The last date fixed for receipt of admission forms and fees for the Pre-Entrance Test 1985, **has been extended from 15-6-1985 to 30-6-1985. No form will be entertained thereafter.**

H.L. Sharma
REGISTRAR

**Printed & Published by M. S. RAMAMURTHY, on behalf of the Association of Indian Universities,
AIU House, 16 Kotla Marg, New Delhi 110002. Grams : UNIBOARD. Phones : 276504, 276780 & 273037
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FD·52

University News

JULY 1, 1985

Re. 1.00

SVU Convocation

Shri K.C. Pant (second from right), Union Education Minister, delivered the convocation address at the Sri Venkateswara University, Tirupati. On his right is Dr. Shankar Dayal Sharma, Governor of Andhra Pradesh and Chancellor of the University.

CLASSIFIED ADVERTISEMENTS

ALIGARH MUSLIM UNIVERSITY

ALIGARH

Advertisement No. 6/85-86

Applications on the prescribed form are invited for the following posts:

Professors

Scale of pay : Rs. 1500-60-1800-100-2000-125/2-2500 plus allowances.

1. **Professor of Civil Engineering (Hydraulics) Department of Civil Engineering.**
2. **Professor of Electrical Engineering, Department of Electrical Engineering.**

Qualifications

I. Essential

An eminent scholar with published work of high quality actively engaged in research. Ten years experience of teaching and/or research. Experience of guiding research at doctoral level.

OR

An outstanding Engineer/Technologist with established reputation who has made significant contribution to knowledge.

II. Desirable

For Post No. 2, Professor of Elect. Engg.

Specialization in Elect. Machines/Elect. Power System/Instrumentation/Electronics/Communication Engineering/Computer Tech./Control System/Circuits & Systems.

Readers

Scale of pay : Rs. 1200-50-1300-60-1900 plus allowances.

3. **Reader in Civil Engineering (Hydraulic) Department of Civil Engineering.**
4. **Reader in Civil Engineering, Department of Civil Engineering.**
5. **Reader in Civil Engineering, Civil Engineering Section, University Polytechnic.**
6. **Reader in Electrical Engineering, Electrical Engineering Section, University Polytechnic.**

Qualifications

A. Good academic record with a Doctor's degree in a relevant field. About five years experience of teaching and/or research and development.

Provided further that candidates not possessing Ph.D. may be considered if they have to their credit equivalent research published work or design/development work of a high order either in the Institution or in an Industry.

OR

In the case of persons to be recruited from Industry or professional fields, candidate should possess good academic record with recognised professional work of about seven years which should include innovation and/or research and development.

Lecturers

Scale of pay: Rs. 700-40-1100-50-1600 plus allowances.

7. **Lecturer in Mechanical Engineering, Mechanical Engineering Section, University Polytechnic.**

Qualifications

(a) Master's degree in appropriate field in Engineering/Technology.

(b) Consistently good academic record with a Bachelor's degree in Engineering/Technology. First class at Bachelor's degree and/or Master's degree level.

(c) One year's relevant professional experience outside academic/research Institution.

Having regard to the requirements of emerging fields of Engineering/Technology and of developing inter-disciplinary programmes the requirements of Engineering/Technology degrees may be waived in the cases of otherwise well qualified candidates.

Provided further that if a candidate does not possess professional experience or a person possessing such experience is not found suitable, the person appointed will be required to obtain desired professional experience within a period of five years of his appointment; failing which he will not be able to earn future increments, until he fulfils this requirement.

If the candidates with M.Tech./M.E. qualifications are not available or not found suitable for appointment the essential qualifications may be relaxed and first class Engineering Graduates may be appointed subject to the condition that the candidate concerned shall have to obtain the M.Tech./M.E. degree within a period of five years failing which he will not be able to earn future increments, until he acquires the prescribed qualifications.

Higher initial start may be given to candidates possessing exceptional qualifications and experience. Candidates interviewed may be paid contribution towards their T.A. equal to one single second class Railway fare only.

Prescribed application forms and instructions may be had from the Assistant Registrar (Selection Committees), Registrar's Office, A.M.U., Aligarh on payment of Rs. 5/- to be deposited in the Cash Section, Finance Office, A.M.U. or through an Indian Postal Order payable to the Finance Officer, A.M.U. either personally or by sending a self-addressed Stamped envelope of size 9 × 4 Cm.

Last date for receipt of applications is 25th July, 1985 (during office hours). Incomplete applications and those received late may not be considered.

NOTE: **SUITABLE PERSONS MAY BE KEPT ON PANEL FOR FUTURE APPOINTMENT.**

I.H. Malick
REGISTRAR

ASSOCIATION OF INDIAN UNIVERSITIES
AIU House, 16 Kotla Marg,
New Delhi 110002

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Opinions expressed in the articles and reviews are individuals and do not necessarily reflect the policies of the Association

Editor :
M. S. RAMAMURTHY

AIU Recommendations on New Education Policy

SORE

In his first policy statement to the nation, the Prime Minister, Shri Rajiv Gandhi had emphasized on the need for giving special attention to the educational sector in preparing the nation to face the challenges of the twenty-first century. In pursuance of the policy statement, the Union Minister of Education, Shri K. C. Pant in his inaugural address to the Annual Meeting of the Association of Indian Universities (AIU), held at Shillong, in February, 1985 suggested that the AIU might constitute a Committee of Vice-Chancellors to frame recommendations for the New Educational Policy so as to enable the Government of India to take into consideration AIU's view points on higher education while formulating the education policy.

Accordingly an AIU committee consisting of Dr. S.D. Gogoi (President, AIU), VC (Dibrugarh); Prof. R.G. Takwale, former VC(Poona); Dr. M. Aram, VC, (GRI); Prof. Shah Manzoor Alam, VC (Kashmir); Dr. Jagdish Narain, Secretary, AIU; and Shri V. Natarajan, Project Director (Exams), AIU met on March 19, 1985, in New Delhi and discussed in detail the problems relating to education in general and higher education in particular. In the light of the discussions, the Committee prepared a set of recommendations for improving the system of higher education. A report comprising these recommendations was published by the AIU, under the title—New Educational Policy, in April, 1985.

Among the various aspects of higher education, the problems of financing; dependence on developed nations in areas of high technologies; ever increasing pressure for student enrolments; emergence of new areas of knowledge like micro-electronics, space and bio-technology etc. and the resultant shift in R&D Centres from Universities to locations outside the university system; non-homogeneous student body requiring decentralized and flexible system of education etc. were considered.

While spelling out the approaches to the problems mentioned above, the report has stressed upon the urgent need for decentralization and democratization of the functioning of the existing educational system with a view to generating internal dynamism and creativity as well as making the system sufficiently responsive to the changing realities of the Indian society. This would, however, entail a considerable political support to bring about the relevant changes within the education system.

With a view to restructuring the existing educational system, the report has emphasized on: (a) the delinking of degrees from jobs (except for professional and other specialized categories of jobs requiring specialized knowledge and skills;) (b) establishment of a National Testing Service (NTS) with a view to selecting candidates for higher education and awarding of scholarships; (c) establishment of open schools and open universities (both at the national and the state levels) to provide non-formal and non-institutional education, to be supplemented by audio-visual methods of educational communications; (d) large scale vocationalization of education at the higher secondary level; (e) establishment of organic and institutional links among universities, R&D centres and industrial undertakings; (f) laying down of specific norms to enable the UGC/Universities or some independent bodies to evaluate the performances of teachers and the educational institutions; (g) enhancement of financial flows to the educational sector, to be supplemented by measures for linking grant-in-aid to performance criteria; and (h) mobilization of additional resources within the university system by determining fees on the basis of the unit cost of education while allowing due concession for the economically backward sections of the student community.

The Report thus contains ideas that have emanated from experienced and able academicians as well as administrators for restructuring the system of higher education which should play catalytic role in bringing about desirable changes in the socio-economic conditions of the country. At the time when the nation's policy planners are busy in formulating new approaches and strategies for educational development, the publication of this Report is timely and useful.

International Conference On New Technologies in Higher Education

On the occasion of the Diamond Jubilee of the Association of Indian Universities (AIU) an International Conference on "New Technologies in Higher Education" is being jointly organised by the AIU, Indian Institute of Technology, Delhi', Jawaharlal Nehru University, Jamia Millia Islamia and the University of Delhi. The two-day Conference will be held at the Indian Institute of Technology, Hauz Khas, New Delhi, on November 28 and 29, 1985.

OVERVIEW AND OBJECTIVES

The Association of Indian Universities, Indian Institute of Technology, Jawaharlal Nehru University, Jamia Millia Islamia and University of Delhi are jointly organising an International Conference at New Delhi on the occasion of the Diamond Jubilee of the Association of Indian Universities. The topic of the Conference "New Technologies in Higher Education" lends itself to consideration of methods and techniques contemporarily used and also new educational technologies making use of TV, Video, Satellite communication and Computers so far as they relate to different aspects of higher education. The objective of the Conference is to assess the possibilities of these technologies in the background of the broad social and cultural context and trends of higher education in India and other developing countries. The current UGC Programme through INSAT Satellite, which will be completing a year, would also be reviewed. In doing so the experience of newer technologies like, Computers, Information Processing etc. in the developed countries will also be considered and ideas developed regarding strategies which correspond to the goals and objectives of higher education in the country. Possible areas of research and experimentation will be discussed.

PROGRAMME

The venue of the Conference will be Indian Institute of Technology (IIT), Hauz Khas, New Delhi.

The Conference will be conducted under four panels to be held concurrently after the opening session. It will conclude with a plenary session.

NOVEMBER 28, 1985

INAUGURATION OF TECHNICAL & BOOK EXHIBITIONS	9.30 a.m.—10.00 a.m.
OPENING SESSION (with Keynote Address)	10.00 a.m.—11.00 a.m.
SESSION II (Four Panels)	11.30 a.m.— 1.00 p.m.
SESSION III (Four Panels)	2.00 p.m.— 5.00 p.m.
OPEN HOUSE— MASS COMMUNICATION CENTRE	6.00 p.m.— 8.00 p.m. (JAMIA MILLIA ISLAMIA)

NOVEMBER 29, 1985

CONCLUDING PLENARY SESSION (Session IV)	9.30 a.m.—11.00 a.m.

The following themes will be discussed under four panels simultaneously during Sessions II and III.

PANEL I

NEW APPROACHES AND TECHNIQUES CURRENTLY PRACTISED IN UNIVERSITIES AND COLLEGES

The purpose of this panel is to present information and evaluation of current practices, both conventional as well as new technologies, e.g. correspondence, radio and other audio-visual techniques of non-formal education.

PANEL II

EMERGING NEW TECHNOLOGIES AND TECHNIQUES

This panel will deal with case studies and experiences of educational technology, comparative merits of different techniqes, use of TV, Computer and Satellite and evaluation of these modern techniques from the standpoint of pedagogic effectiveness and related problems.

PANEL III

MANAGEMENT AND ECONOMICS OF MODERN TECHNIQUES AND APPROACHES IN HIGHER EDUCATION AND APPLICATION OF MODERN TECHNOLOGY

The purpose of this panel is to study, exchange information and make comparative study of these techniques from the view point of costs, administration and other related problems.

PANEL IV

SOCIAL AND CULTURAL ASPECTS AND EDUCATIONAL ENVIRONMENT

This panel will spell out features of Indian society and culture with special focus on communications both traditional and modern. It will also survey the broad educational scene in higher education. The implications of these phenomena for the use of new technology in higher education will be studied.

Concluding Plenary Session

RECOMMENDATIONS FOR RESEARCH AND INVESTIGATIONS IN NEW TECHNIQUES AND FOLLOW-UP ACTION

The main purpose of this session is to make recommendations on the basis of the reports of the panels and suggest draft proposals for universities/colleges for implementing a programme of adoption of new technologies in higher education and to identify technically developed agencies to help in the implementation of such programme.

PARTICIPATION

Institutions of higher learning and research, governmental and private organisations in the field of electronics, space, information and data processing and related fields, as well as individuals are invited to participate. Such participation can be in terms of presenting a paper, or demonstration of technologies, aids and other learning devices developed in India and abroad.

EXHIBITION

It is proposed to hold an exhibition of books, journals, equipment for Video, TV and Computer aided instruction and demonstration of new technologies during the Conference. Entries for the exhibition are invited.

VENUE

The venue of the Conference and the Exhibition will be the Indian Institute of Technology, Hauz Khas, New Delhi-110016.

PAPERS

The papers should be prepared in accordance with the instructions. Papers (accompanied by a two page abstract) not exceeding 3000 words, should be sent latest by July 31, 1985 to the Convenors.

Prof. TAPAS MAJUMDAR
Zakir Husain Centre for Educational Studies
Jawaharlal Nehru, University
New Delhi-110067, INDIA

Prof. S. SHUKLA
Head
Department of Education
Jamia Millia Islamia
New Delhi-110025, INDIA

For further information, regarding the Conference, please write to:

Prof. L.R. SHAH
Director
Adult, Continuing Education & Extension Unit
Jawaharlal Nehru University.
New Delhi-110067, INDIA

Challenges for Commerce Education

Raj K. Agarwala*

Paper presented at the Seminar on Professional Dimensions of Commerce Education organised by the Faculty of Commerce, University of Jodhpur in collaboration with the Institute of Chartered Accountants of India. The seminar was held on February 16-17, 1985 at Jodhpur.

The generally accepted meaning of challenge is a threat where an adversary puts at stake the prevailing privileges, position and power. Perhaps more relevant in the present context is the other meaning of challenge, that is, a call to dare and prove the continued worthiness to possess privileges, position and power. Challenge to commerce education is an invitation to commerce educators to test the vibrant nature of this discipline of human mind, and to re-enforce the versatile potential and possibilities of commerce in the service of society.

Education is the development of mental faculties and the discipline of thinking process of man as a complete sociological entity. Acquiring knowledge and generating knowledge is the process of education. Let us recall that Man's chief limitation is the limit of human mind to learn. This limit has lead to the evolution of human knowledge in phases. Man adopted a procedure of enquiry in his search for knowledge and this was the breakup knowledge into separate subjects of study. This natural fragmentation of knowledge for convenience of probing and understanding, in time, made the separated subject areas drift apart and build up their own isolated monuments of glory. Political Economy broke into Political Science and Economics, Anthropology separated from Sociology, and Psychology split away from Physiology. Then Commerce emerged out of Economics and came face to face with a number of challenges.

Challenge of Identity

The search for identity has been long and arduous for Commerce as a Social Science of business studies. The Special Committee for Commerce Education (1961), after a learned enquiry, identified Commerce as a distinct educational stream. It has acquired the identity of an independent and separate academic discipline as a branch of knowledge. Commerce studies human behaviour in the conduct of business and focusses on those issues which other branches of knowledge do not study directly. Commerce education is more concerned with a study of the anatomy, the casual forces and the inter-relationships of business phenomena in a detached and scientific spirit.

The science of commerce has developed by borrowing relevant findings and methods from other sciences. It is a derived science but that does not mean that it is not a separate science. Moreover, commerce is the discipline which made the great departure from the trend of human knowledge—it did not drift apart into an ivory tower but brought together the various compartments of knowledge. Commerce was the first human attempt to integrate and institutionalize the relevant contributions of other fields of enquiry into a truly interdisciplinary amalgam. The super-structure of commerce was built on the firm, factual and fruitful foundation of Law, Economics, Mathematics, Accounting and Public Finance. The inter-disciplinary path set by Commerce Education has now become the accepted norm for all comprehensive human endeavour to learn.

The challenge of identity lies no more in outlining the identity itself. It lies in making the educators, students and education administrators understand and accept its true colour and contours. Its nature as a liberal education and its culture as a fundamental Science still needs to be explained and publicized.

Objectives

The manner of the evolution of commerce in the educational spectrum of the country has made the search for objectives a continuing challenge. This process is going on for about a hundred years now, and two remarkable features mark this process : change and relevance. Commerce as an educational exercise has kept itself in tune with the thinking of the society and the throbbing of social activity. What started as a simple exercise for vocational purposes with limited objectives, grew into a conscious social effort to sustain the spurt of business activities by the turn of the century. In the following decades, commerce acquired distinct objectives as an academic discipline at the undergraduate level in the forties. By mid century, the education scientists and academic pioneers joined in the search and lead to the emergence of specific purpose and pointed goals.

The Radhakrishnan Commission on 'University Education' had observed that the objectives of commerce courses in universities were not clear. The VKRV Rao Committee (1961) caught the

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Professor, Faculty of Commerce, University of Jodhpur.

stray strings, created a total picture and enunciated the aims and objectives of commerce education :

> 'It must be emphasised, therefore, that the primary object of commerce education must be imparting liberal education of the same kind as is available to graduates in other subjects....
>
> 'Commerce education is not merely a liberal education....Commerce education has to give a graduate some special aptitudes which is not likely to accompany the imparting of education in other fields....'

The first phase of the challenge of objective setting is over. The objectives are clearly carved. The big challenge is to remove the general confusion in the mind of the public, and more significantly, in the minds of most of the teachers of the discipline. The leaders of thought in positions of influence, and the commerce educators must explain and examine the nature and the objectives of commerce education individually and collectively, at official and non-official levels, in writing and in lectures.

Departure and Deviation

The university education has got into the quagmire of fixed thinking and static approach. Commerce as a discipline is concerned with that area of social activity where change is survival need and success criterion. We must learn to simulate a deviant behaviour pattern in the planning of commerce education, its course content and course conduct. The infuse in commerce educators a readiness to depart from old norms and mores in a challenge we have to seek and to meet. This calls for a careful and continuing re-examination of the premises, promises and programmes of commerce education. Nothing is too sacred to touch, nothing is too precious to give up—if it gets out of tune with changing times. The society is moving too fast for us to remain stationary. Commerce education planners and education administrators have to turn futuristic in their perspective and pragmatic in their approach.

Excellence and Utility

Human society, in long run, accepts genuine competence and contribution to social needs. Commerce has achieved social acceptance. The first battle is won but many more battles are to be fought to win the war. The next argument is to sustain the past gains and to spread out into greater social relevance. For this, it is imminent to conquer adverse publicity. The general ignorance of the nature of commerce education is appalling. This can be removed only through a concerted, continuous image projection centred on excellence and utility. The commerce graduate must be prepared as agents of achievement in business opportunities as well as in the rapidly growing non-business opportunities such as education, social services, philanthropic agencies, government/semi-government bodies, and all other competitive positions of promising career in life. A combined effort is needed to obtain for commerce its rightful place in all public service examinations : not that public services provide large opportunities to large numbers but that it is an image-building recognition. Some other requirements are:

(a) the strengthening of liberal aspect which broaden the mental horizon and provide a perspective—a way of thinking—of commonsense rationality;

(b) the strengthening of communication ability in written and spoken languages;

(c) the strengthening of personal attributes of character, grooming and positive response.

Regimentation and Centralization

Commerce education is faced with what is now a common threat to education in India—conformity and centralization. Those who pay the money, call the tune, it is said. The danger here is that the people who pay the money are not the persons who call the tune. Those who call the tune are the career-administrators who are neither educators nor persons committed to future of young people, nor users of the youth as employers. In education this could be the harbinger of doom. In a field of such vital concern for society, this means the negation of exploration and experimentation, idea generation and maturation, creativity and ingenuity. The day uniformity becomes the conceptual core of commerce, it shall degenerate into commonness. Its utility for the ever-enlarging panorama of life shall be diluted into significance. The commerce educators have to convince the society and education administration that commerce education must be left free to mould its own design and destiny by continuous adjustment with local, regional, national, international environment and opportunities. Such adjustment calls for variety and change, nor conformity and regimentation. □

OPEN UNIVERSITY AT DOORSTEP

Pradeep Kumar Srivastava*

A new education policy in India, is being currently debated in academic circles. In these debates, a quest for alternative channels of education has been made, so as to increase the percentage of functional literacy to optimum level as well as to move in the direction of life-long education and a learning society. The question of education can be solved only when we perceive it in an over-all national and international context. In the Report of the International Commission on the Development of Education (Unesco) "Learning To Be" it has been rightly observed, "Education is a vital factor in the progress of any nation in particular and the world in general. As such education must extend throughout life and should not only be available to all but should be the guiding force of every individual's life."

Large scale illiteracy (i.e. 63.77% according to 1981 census) and closed system of education in India is undoubtedly a matter of disgrace to the land of world's oldest universities. When the wave of innovations in education has been emerging in developed and developing countries it is high time to develop Indianise channels by which we can remove the dark clouds of illiteracy and ignorance from the horizons of India and move in the direction of life-long education and establishment of a learning society, where everyone is getting opportunities for spiritual upliftment and material comfort to liberate himself from the shackles of ignorance, selfishness, casteism, regionalism and communalism and to use their energies and creative potential for the welfare of the nation and for the whole humanity.

The need is felt throughout the world for institutions aimed at special categories of adults, workers wanting qualifications, professional men, executives and technicians on whom political or social changes suddenly impose responsibilities for which they were not trained or which technological changes have superseded. In this respect, certain systems providingb roader access to higher education are of special interest e g. Telekolleg (Federal Republic of Germany), the secondary correspondence and radio school of NHK Radio (Japan) and the most highly developed current system is that of open university in the United Kingdom, which combines radio and television broadbasts, the use of special manuals and learning kits, correspondence courses, consultation of video cassettes, group seminars and summer schools.

There are proposals for an open university at the national level and for separate channels of mass media to aid the national open university scheme. The open university, as a non-formal channel of distant education, will come to the doorsteps of everyone who aspire to learn more. The waiving of the licence fee for radio and television receiving sets is the right step in making education accessible to everyone. The Andhra Pradesh Open University has already started functioning from Hyderabad and devised mode of admission as well as system of instruction. There are also proposals to set up "Tilak Maharashtra Vidyapeeth : Open University" in Maharashtra.

The idea of open university was first publicly discussed in Britain by Harold Wilson, in a speech in Glasgow in 1963, in which he talked about "a university of air," stressing the use of broadcasting media as an integral part of the teaching system. A Government white paper was published in 1966, recommending the establishment of planning committee to examine the idea in detail. The committee was set up under the chairmanship of Sir Peter Venables, the Vice-chancellor of the university of Aston in Birmingham, and its report published in 1969 was accepted by British Government. In the spring of 1969 the first open university of Britain came tentatively into existence without a budget or its own premises, and with a staff of four. Later on full fledged university head quarter came into existence at Walton Hall, in the new city of Milton Keynes, Buckingham Shire.

The open university is an alternative non-formal channel of education of distant learning without the requirements of any type of previous formal education. It encompasses self-instructional material through correspondence courses, reinforced by radio and television broadcasts, a little bit of personal face to face instruction and guidance at study centres and summer schools, as well as continuous assessment of students by computer and tutors and a final supervised examination.

As the formal, brick and mortar, facilities cannot be provided for everyone, so the need to establish open university. It provides equal opportunities to all those who want to be educated in their own place at their leisure. It ties to increase the productivity of the nation by increasing the level of knowledge and making the citizens efficient in their work. It also tries to build a society where continuing and life-long education could thrive. It also gives chances to youths and adults to earn while learning. The open university channelises the energies of the youths in increasing productivity and keeping them engaged in constructive pursuits, which otherwise are used to create civic disorder. When compared to traditional closed learning system the open learning system is flexible and economical and has an edge over the formal system of

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**Lecturer in B.Ed., Government Postgraduate College, Gopeshwar—Distt. Chamoli (U.P.)*

education is that no prior formal academic qualifications are required for admission to the open university. Secondly, the open university system offers an alternative system of higher education which could pose challenge to the traditional closed system of higher education with respect to standards, as well as would meet the needs of the nation by its flexible nature. Though we can not guarantee a comfortable employment prospects to the many of the aspirants after higher education, still they will derive the pleasure of pursuing their interests and adjust better in their life, as well as increased proficiency in their work to those who are engaged in one or the other vocation. The open university system will be relieved of the indiscipline problems of students which are characteristic features of traditional universities.

Before the establishment of open university the objectives to be achieved must be clearly conceived keeping in mind the interests of prospective students as well as those of the nation. The objectives of open university in India may be to provide opportunities, for undergraduate, post-graduate, professional enrichment education as well as education of special interests, bridge up courses, to those, who are denied admission to existing institutions of higher learning, as well as to those who were unable to receive any type of formal education and second chance to those who are engaged in different vocations to enhance their field of knowledge and to those who are academically minded and wanted to pursue education of their special interests. From the national point of view, the open university must serve to increase the productivity of the nation in every field as well as understanding the nation better and developing civic efficiency, national proud and scientific temper of mind in the futute products of the university.

In India there is diversity in the language spoken and in most states the medium of instruction is either English, Hindi or regional language of respective state. The regional hindrances must be resolved before the ambitious plan for open university is implemented. The most suitable pattern may be statewise open universities under the direct control of central Government as it will facilitate uniformity in working and avoid duplicacy of efforts and resources. A short six month course in the language of instruction before actual start of undergraduate courses will be beneficial to those who have not attended any formal educational institution in their life as in the absence of working knowledge of language of instruction, it will be very difficult for a person to carry on an undergraduate course through the open university. The courses offered by open university may provide flexibility in the choice of courses to candidates from different faculties according to their needs. The approximate age at which the doors of open university may be opened to the prospective candidates may be most suitably 19 plus years as in India the average age after which a student goes for a degree course in traditional system is 18 plus years. The open university of Andhra Pradesh conducts an objective type admission test for those who have no formal education in three papers viz. English, Modern Indian Language (Telugu/Urdu/Hindi) and General knowledge. It provides direct admission to undergraduate courses to those, who have passed their Intermediate examination. A similar pattern can be followed by the proposed National open university.

How the degree will be awarded and what will be the mode of evaluation must be clearly designed keeping in mind the Indian conditions. The mode of evaluation must be based on the continuous assessment of the students as only through this type of system, feedback can be provided to students. The students may be given weekly or monthly assignments, which may include essay type short answer and objective type questions, and a final objective type examination conducted at the end of the year in each course. Some sort of project work may be a part of the undergraduate course so that students may learn the steps of scientific method to solve any problem. It will be beneficial if open university in India follows the credit accumulation system for the award of degree, diploma or certificate. A credit may be awarded to a student, for one year of part time study with the university, on the basis of continuous assessment including a final supervised examination. The students can take maximum of two courses each year and thus accumulate two credits each year. For the award of a B.A./B.Sc./B.Com. degree a student must accumulate at least six credits.

The open university system must offer well structured education with the emphasis on self-learning by providing them the sources of information. The courses may be structured well by identifying the needs of prospective students of open university such as teachers, farmers, technicians, different groups of on-the-job workers, adult learners, housewives, drop out students and left out students of the existing institutions of higher education. The duration of courses and start of the academic session will depend upon the structuring of the courses and mode of evaluation. In India, the academic session generally runs from July to June. The session of open university may run from January to December as it will give another chance of securing admission to left out students of traditional universities. The financing of the open university may fall on the shoulders of the Central Government as well as on prospective students in the form of fees. For students of weaker sections the Government should own the responsibility of subsidising their cost of education. The open university must develop means to impart education in Indianise manner. The mode of instruction will include correspondence text, manuals, self-correcting assignments and supplementary materials supported by television and radio broadcast and summer schools intended to give the students new information. For the feedback, provision may be made for computer marked assignments, tutor marked assignments and face to face tuition and guidance at local study centres. The local study centres may be situated in existing institutions of higher education and may open in the evening hours and on holidays to provide students face-to-face tuition, and remove difficulties in their studies, and help them in course choice by the part time tutors and counsellors. These study centres will form the nucleus of the open university organization so they may be provided with radio and television sets and library facilities according to needs of open university students. The areas which are not yet covered by television network may be provided with VCR/playback facility.

The problems to be faced in the implementation of this innovation of open university may be the expected fear of deterioration in standards of education and increase in unemployment with quantitative expansion, language of instruction, limited television and radio services for education, lack of trained personnel skilled in radio and T.V. technologies, program design and programmed instruction, limited library facilities, inefficient postal services, poor public response to mass media of instruction and expected heavy dropout after initial registration due to private, professional and domestic factors of students.

The open university will be economical and ensure better management of the existing resources. The system of teaching has public accountability as the teaching by correspondence material, television and radio will be open to public for criticism and suggestions for improvement. The courses would be at least as good and equivalent as are taught in traditional university. With a followup service of research the whole system can be improved as the time will pass. To make citizens efficient in their national, social, family and professional life, every type of innovation which costs less but gives excellent results, may be tested. Care may be taken to see that it is purposeful, dynamic and relevant to present as well as foreseeable needs of the individual as well as that of the nation. India has already begun harnessing the services of INSAT-1B for relaying a programme of enrichment education for students engaged in higher studies and for the educated public at large. From enrichment education programmes India can leap to curriculum based structured educational programmes through the national open university. The open university system will be more interesting, efficient and widely accepted by those who pursue studies through correspondence or appear privately in examination. The performance of students in terms of result will also be better. It will offer an inspiring environment for the pursuit of academic excellence. It will be free from the menace of indiscipline and mass copying which is characteristic feature of higher educational institution at some places. The open university as a means of distance education has already begun knocking the doors in Andhra Pradesh. Soon the people all over the country may hope to hear the knocks on their doors by the system of open university. □

GURU NANAK DEV UNIVERSITY

AMRITSAR

(Faculty of Engineering and Technology)

ADMISSION NOTICE—1985-86

Applications are invited for admission to 1st year of (i) **B.TECH. (ELECTRONICS)** & (ii) **B.TECH. (BIO-TECHNOLOGY)** courses—Four year programmes.

ELIGIBILITY : (a) Pre-Engg. of Guru Nanak Dev University with minimum of 55% marks; or
(b) Part-I of the Three year B.Sc. of Guru Nanak Dev University with minimum of 55% marks; or
(c) Any other examination recognised by Guru Nanak Dev University as equivalent to (a) or (b) above.

Prospectus and admission forms can be obtained from the Assistant Registrar (General), Guru Nanak Dev University, Amritsar on payment of Rs. 10/- in cash and Rs. 15/- by post (submitting crossed Indian Postal Order(s) in favour of Registrar, Guru Nanak Dev University, Amritsar) after JUNE 15, 1985.

The following schedule shall be followed for admission :

Last date of receipt of applications	—	JULY 6, 1985
Issue of Roll Numbers	—	JULY 13, 1985 from 9.00 a.m. to 10.30 a.m.
Entrance Test (Based on Per-Engg. Syllabus & Engg. Aptitude)	—	JULY 13, 1985 from 11.00 a.m. to 12.00 noon.
Interview	—	JULY 27, 1985.

DEAN
Academic Affairs

KARNATAKA REGIONAL ENGINEERING COLLEGE

SURATHKAL (D.K.)

P.O. SRINIVASNAGAR-574157, KARNATAKA STATE

NOTIFICATION

ADMISSION TO POST-GRADUATE COURSES FOR 1985-86

Applications are invited for admission to the following three semesters (Eighteen months) Post-graduate M.Tech. Courses.

(i) Marine Structures
(ii) Industrial Structures
(iii) Industrial Electronics
(iv) Heat Power
(v) Chemical Plant Design
(vi) Hydraulics & Water Resources Engg.
(vii) Process Metallurgy.

Minimum Qualifications

The admission is open to candidates who have passed the B.E./B.Tech./Degree Examination with not less than 50% marks in the aggregate in the appropriate branch of Engineering of the Mangalore University or any other Indian University or any other qualification recognised by the University of Mangalore as equivalent thereto.

Candidates who have passed the following examinations are also eligible for admission :

1. The A.M.I.E. Examination in the appropriate subject.
2. M.Sc., Physics with Electronics or Solid State Physics for the course in Industrial Electronics.
3. M.Sc., (Chemistry)/Inorganic and/or Physical and/or Analytical and/or Applied Chemistry, B.E. Chemical Engineering, A.M.I.I.M., Master's Degree in Mineral Beneficiation/Mineral Dressing/ Ore dressing of any recognised university.

   A.I.M. (London), M.Sc., Applied Science with Material Science of any recognised University with Material Science to the course in Process Metallurgy.
4. A.M.I.I. Che for Chemical Plant Design.

The College has well equipped laboratories with specialised equipment procured under UNESCO assistance. The Post-graduate courses cover academic work at the College and Practical Training and Project Work in Industries/Research Organisations/Projects/College.

Post-graduate scholarships of the value of Rs. 1000/- per month will be granted only to those students who have passed the GATE Examination. A few candidates sponsored by the collaborating Industries & Sister Organisations will be considered for admission on non-stipendiary basis.

15% of the seats are reserved for candidates belonging to Scheduled Castes and 7½% for Scheduled Tribes.

Candidates who possess the qualifications outlined above may obtain Information Bulletin together with application form and detailed instructions including eligibility conditions etc. by sending Rs. 20/- by way of Indian Postal Order crossed (Rs. 10/- for SC/ST) payable to the Principal, K.R.E. College, Surathkal, P.O. Srinivasnagar-574157 along with self-addressed unstamped envelop of the size 23 cm x 11 cm. Such of the students who are qualified in the GATE Examination and appeared for B.E./B.Tech. Examination, but whose results are not yet announced are also eligible to apply.

The last date to receive the filled-in application is 16-8-1985. The SC/ST candidate should clearly indicate that they belong to the particular category.

B.S. Basavarajaiah
PRINCIPAL

Union Education Minister Addresses Convocation of Sri Venkateswara Varsity

Excerpts from the Convocation Address delivered by Shri K.C. Pant, Union Education Minister at the Sri Venkateswara University, Tirupati on June 14, 1985.

Convocation

"There is a growing feeling in our country today that we should create an educational environment, which is free from undue political influence and interference. It is also being felt that the inspiration for learning should be a perennial force of the educational environment, and that this can be secured not by any artificial means but by the daily thoughts and aspirations of teachers and students. I believe that such an environment is easier to be achieved in universities like yours where the historical and geographical background itself provides a natural setting for the educational environment.

"But apart from this what is very important in a University is the richness of ideas which should continually grow by the developed power of observation and concentration and by a widening of interests. There should also be a stress on the spirit of discovery and invention which come as a result of the rigorous exercise of curiosity, speculative faculty and imagination and an insistent stress on achievement and fulfilment. One of the best methods is to create an atmosphere in which students are constantly exposed to the stimulus of vigorous and powerful ideas. I have not seen your University enough, but I have been told that teachers and students here are striving to create an atmosphere vibrant with synthetic thought and integral aspiration.

"There are today a number of circumstances which necessitate a review of our educational system. This review is not limited to the need for upgrading various courses of studies prescribed at different levels of education in schools, colleges, and universities. What we are called upon today is to examine in a systematic manner, on the one hand, objectives, contents and methods of education, and on the other hand, the linkages of education with the world of work. In this examination, we wish to involve not only educationists and policy makers but also teachers, students and parents. And it is a matter of gratification that we are receiving a warm response from various sectors of the society; numerous suggestions are being received from various organisations and individuals. It is becoming clearer that this is the opportune moment for initiating a process of change.

"As you know, an effort to formulate and realise a national system of education was a major element in the nationalist struggle for freedom. The pioneering educationists of that period including Gandhiji himself initiated bold experiments, and it seemed, with the advent of freedom the promise held out by them could be fulfilled. After Independence, much has been attempted, but the feeling has continued to persist that the system of education established by the British tends to resist the pressures of new trends in education.

"There are also other compelling factors which necessitate a change in our educational system. There is, for example, an unprecedented explosion of information, and we need to devise ways and means for helping students to reach the frontiers of knowledge as speedily as possible. We also need to equip them with attitudes and capacities for self-learning and for life-long education. There is also an unprecedented advancement in communication technology, and new avenues have opened up to utilise this technology for the highest welfare of students and teachers. It seems certain that new methods of learning and teaching will emerge through the utilisation of modern communication technology. There is also an increasing awareness of the need of education for all. And along with this awareness, there is a need to emphasise the ideas of continuing education, functional literacy learning, society learning to learn and learning to do.

"The first priority that we are led to fix for ourselves is the universalisation of elementary education. The Constitution had imposed an obligation upon us to realise the goal of universalisation by 1960. That the task is full of difficulties can be easily gauged by the alarming rate of drop-outs and lack of motivation among large sections of the economically weaker people. There are also serious problems relating to girls' education. It has been estimated that during the next five years we will be required to enrol about 6 crores of children, of whom only about 2.5 crores can be absorbed in the formal channel of education. For the rest, we have to develop a non-formal channel, and this is a major challenge which we are called upon to meet effectively. It will be clear that in terms of political will and sheer human effort, leaving aside the enormous problem of financial resources, this programme will be unparallelled in the post-Independence era. But precisely for this reason, I lose no opportunity in soliciting the co-operation of all sections of society, and particularly of teachers and students...

"As you know, provincialism, linguism and casteism and the like are divisive in our polity that assume ugly proportion from time to time. There are even sessionist demands, challenging the very foundation of our cultural and political unity. We should, therefore, be careful not to encourage any divisive tendency in the country. I must point out that diversity is not to be confused with divisiveness. Indeed, diversity can well be a source of strength, providing colour and variety of the rich tapestry to India. We have, therefore, to ensure that the dark forces of division are not able to exploit this diversity for promoting disunity. It is in this context that it has been observed that nothing can be as effective as education in combating the hostile forces of disintegration. It has been rightly pointed out that children should be trained right from the early stages of their growth to understand and appreciate the basic unity of India. But in order that education can fulfil this task, teachers must themselves be convinced in their mind that India is one. They will need to have an authentic knowledge and grasp of India, its long and eventful journey through the ages, its strengths and weaknesses and the many contributions it has made to the evolution of human civilisation. Coming to the present and considering the special importance of the nationalist upsurge and freedom struggle, they will have to acquaint the students with the stories of valour and sacrifice made by an earlier generation, as also with nationalism and other great values that came to play a crucial role in the achievement of freedom. At the university level, there has to be a great stress on the study of Indian litrature and Indian art, Indian science and Indian ethics, Indian polity and social thought, and Indian religion and spirituality. It is the special function of the universities to illumine the minds of the young and to infuse into them a new spirit and aspiration to accomplish those tasks which are needed to build up a fully integrated and harmonious India.

"The second idea to which I would like to refer is related to the need to prepare ourselves for the 21st Century. The young students who are participating in this convocation will have to focus their gaze on what is likely to happen in our country and in the world during the next 30 to 40 years. In this context, it would be worthwhile to develop a futuristic perception and to realise that multifaceted development will be the dominant theme of the coming days. Economic growth will come to be increasingly perceived to be dependent not only on scientific and technological development but also on creativity and cultural efflorescence. There has also to be increasing stress on integrated rural development. And at the international level, global peace, human unity and harmonious North South cooperation will come to be matters of increasing urgency and necessity.

"I am sure that it will be agreed that the new educational policy will have to provide education appropriate to these ideas and needs. Therefore, provision will have to be made for the development of skills not only of science and technology but also for creativity and culture that will enable the young students of today and tomorrow to contribute significantly to their world of work, effort and achievement.

"And the third idea that I should like to underline is related to the social responsibility of the educational system as a whole. It is often said that the educational system cannot become what it ought to be unless the society undergoes a radical change. There is a great deal of force in this argument but I think that there is a serious fallacy in it. The fallacy lies in assuming that society can effectuate its transformation independent of a radical change in the educational system. As a matter of fact, the educational sector is unique in the sense that all wheels of social progress turn on the steamforce of the engine of education. Therefore, I am inclined to underline the social consequences of education and to urge on education an acute awareness of its social obligations.

"Teaching, as you know, is a mother-profession, and the attitudes and motive-force of change in other professions will depend on the inspiration that the teaching profession can provide. We speak today of the lack of work-ethos in our country. And if we examine the problem closely we shall find that a good deal will depend on the example that the teachers can set in regard to their own diligence, commitment and dedication. But let me hasten to add that along with teachers, students also have a social responsibility. In the first place, students have to realise that a true fulfilment of their own personality will depend on the extent to which they will understand the inter-dependence between the individual and the society. In the second place, the educated youth must realise that people including the poorest contribute to the provision of facilities in the educational sector. It will be a mis-use of education, if the educated youth, after receiving the benefits of education, utilise their developed skill and capacities only for their own personal aggrandisement. Every educated youth should feel himself indebted to society, and he must resolve to repay at least a part of what he has received from it. But we must go even farther. The educated youth, by virtue of the fact that he has become awakened, has a special responsibility to keep the torch light burning and to strive constantly so that the light of awakening may go on increasing among larger and larger sections of people, thereby making them capable of sharing and co-operating and marching forward towards increasing harmony and unity..." ☐

Seminar on Conservation Biology Organised at Manipur University

The Department of Life Sciences of the Manipur University organised a seminar on Conservation Biology. The seminar was sponsored by the University Grants Commission.

The main objectives of the seminar were to awake mass consciousness on conservation biology programme; to identify and draw up a phased programme; to develop a conservation cell in Manipur University and to get expertise from International Union for Conservation of Nature and Natural Resources (I.U.C.N.)

Inaugurating the seminar Shri L. Lalit Singh, Finance and Forest Minister of Manipur said that in order to bring about a desired development on Conservation Biology, a scientific and technological strategy based on comprehensive survey of natural resources, their exploitation based on technologies appropriate to the local environment should be drawn. He urged the experts, teachers and students of the Universities and Research Institutes to enable to utilise the natural resources of the north-eastern region in the most scientific way.

The Minister said that concerted efforts should be made to adopt the available knowledge to meet the total needs, develop new methodology to make the maximum use of available raw materials and to improve the technology already acquired. The Seventh Five Year Plan for the State of Manipur has certainly incorporated adequate measures in the form of environmental programme, he said.

Prof. K.J. Mahale, Vice-Chancellor, Manipur University said that arms race and production of nuclear weapons in the world today have dwindled the beauty of nature. He reminded the comments of great men like Tagore, Raussel, Gandhi, Lamatin and others of the beauties of nature and its importance to mankind.

Several papers on soil conservation, conservation of forest and wild life, awakening of ecological conscience in people, impact of biotechnology on genetic sesources, applications of genetics in conservation etc. were presented and discussed.

Over fiftyfive delegates from Manipur and other parts of the country participated in the deliberations of the seminar.

VCs conference report submitted

The Vice-Chancellors' Conference which was held in New Delhi some time ago has submitted its report to the Government, it is reported. It has recommended to the Government that it should direct each Ministry to contribute five per cent of its plan funds towards education and educational development. The Conference also suggested another five per cent for the R & D work related to different sectors, it is further reported.

The Vice-Chancellors' Conference has pleaded that this would be over and above the normal allocation made for education by the Ministry of Education.

The conference has justified its recommendation of five per cent contribution by each Ministry on the ground that their manpower requirements are ultimately taken care of by educational institutions only. Unless the needs of the educational institutions are met fully, they would not be able to provide the required manpower resources, the conference pointed out in its report.

The conference has pointed our that lack of resources has been the major constraint in the development of educational institutions and their proper functioning. Contribution by individual ministries would also lessen the burden of the Plan allocations.

The conference has further argued that unless a fixed percentage of plan funds is earmarked for education and educational development as also the R and D as a matter of policy, no substantial headway can be made. At the moment, the Planning Commission allocates funds in the name of the Education Ministry which in turn distributes it among different heads. The actual amount spent on education and educational development is very little. The conference report has cited the example of the countries which fixed a certain percentage of their total expenditure for education.

The conference has laid stress on restructuring of undergraduate courses in order to link them with development. It has also put emphasis on non-formal education. Open University concept has been favoured. It has also suggested a uniform system of education throughout the country, including the school education.

Panel discussion on man & environment organised at HAU

While presiding over the panel discussion on Man & Environment, organised at Hissar recently, the Vice-Chancellor of Haryana Agricultural University, Mr. L.D. Kataria stressed the need for scientific studies and sufficient data being made available for formulating a national policy on environment. He said that programmes such as social forestry, desert development, soil reclamation, work on watershed basis, needed to be undertaken scientifically to prevent further damage to usable soil. He stressed the need of minute-to-minute monitoring of air pollution so that effective remedial steps could be taken in minimising pollution hazards.

Stressing the importance of planting trees, Mr. Kataria said that a tree grows and develops with environment. There should be a massive programme of planting trees in each house on the pattern of the Japanese people who have developed a keen appreciation for trees, forests, greenery.

On this occasion, the Vice-Chancellor released a special issue of Haryana Farming devoted to environment and hoped that the other university publications and magazines will highlight the current problems of the nation in the fields of agriculture, environment and education. Mr. Kataria pleaded for environmental education at the school stage so that students could develop appreciation for healthy and clean environment.

More than half a dozen scientists, including Mr. K. Suresh of Kishore Bharatia voluntary organisation devoted to agriculture and education in Madhya Pradesh, participated in the panel discussion. Mr. Suresh outlined the basic causes of the Bhopal Gas tragedy and stressed that a national charter for environment be evolved so that people could be made aware of the damage inherent in the manufacture and use of pesticides, drugs and chemicals.

An exhibition of posters, photographs, literature displaying various aspects of pollution hazards, environmental conservation, and wild life was also organised on this occasion.

Training camp organised at GKV

A six-day training camp for Instructors and Supervisors was organised by the Centre of Adult, Continuing Education and Extension Programme of Gurukula Kangri University, Hardwar from 2nd to 7th June at the University Campus. The camp was attended by more than fifty male & female instructors and two supervisors. It was inaugurated by Shri A.K. Singh, S.D.M., Hardwar.

Speaking on the occasion Shri G.B.K. Hooja, Vice-Chancellor of the University asked the adult education functionaries including instructors to work hard for the improvement in in the quality of life of illiterate villagers.

A three-day intensive training was given by Shri Sidrat Ansari, Director, All India Taleem Ghar, New Delhi. Instructors were trained in a direction of making them an ideal citizen. Acharya Bhagwan Dev, former M.P., and Shri Ram Prasad Vedalankar, Pro-Vice-Chancellor, delivered talks leading to the enhancement in moral values. Prof. O.P. Mishra, Head of Phychology Deptt., discussed the phychological aspects of some social problems. Discussions were also held on the subjects like 'health and nutrition' and 'role of mass media' for the benefit of instructors.

Workshop on fourier optics

A short-term summer workshop on 'Analytical Fourier Trans form Optics' for University and College teachers was organised by the School of Optics at Hyderabad. The workshop was inaugurated by Dr. S. Viswanatham, Joint Secretary, Board of Intermediate Education of Andhra Pradesh on June 3, 1985 with a talk on 'Some Aspects of Fourier Optics'. This was followed by a lecture on 'Coherence of Light' by Prof. P.K. Mondal, the President of the School.

During the Workshop, special emphasis was given on topics like Integral Transforms, Special Functions, Computer Programming, Numerical Methods and their applications in Optics.

The School is planning to hold a similar workshop in next summer with representation of University and College teachers from all parts of India.

National seminar on people and poverty

The Centre for Research, Extension and Integrated Rural Development of the Gandhigram Rural University, Gandhigram will organise a seminar on "People and Poverty—The Dilemma of Rural Development Transaction" in the first week of September, 1985. The University Grants Commission has agreed to sponsor the seminar.

The objective of the seminar is to focus on documenting the survey researches on the implementation of IRD Programmes, their imperatives and imperils, outlining the matrix of involvement of voluntary agencies and developing a suitable organisational framework for effective IRD implementation.

The audience at the seminar will consist of teachers in Rural Development, Rural Extension, Rural Economics, Rural Sociology from Colleges and Universities in Tamilnadu, practitioners of Rural Development from prospective voluntary agencies in the field, promising industrialists, officials from the nationalised banks and rural development departments of the Governments.

Further details about the seminar can be had from Prof. R. Subramanian, Director, Centre for Research, Extension and Integrated Rural Development of the University.

News from Agril. Varsities

Efficient health cover for farm animals

Dr. R.S. Grewal, Director of Animal Husbandry, Punjab while inaugurating a two-day Animal Husbandry Officers' Workshop at the Punjab Agricultural University said that adequate health cover was vital for the development of Animal Husbandry Programme in the State. He further said that an efficient health cover system was not only imperative for preventing losses due to diseases and pests, but also important for boosting the animal production. Apart from preventing production losses, it helped checking of mortality, sterility, abortion, etc., be added.

Dr. Grewal said that the cross-breeding programme aimed at increased productivity had also created a number of new disease problems which needed immediate attention of the animal experts in respect of diagnosis of diseases, production of vaccine and other control measures. Dr. Grewal told that Punjab was still free from rinder pest disease, but in some parts of Jammu & Kashmir and Haryana the outbreak of this disease was alarming. He told that the Punjab Veterinary Vaccine Institute had started producing rinder pest tissue culture vaccine. Foot and mouth disease though not fatal caused tremendous production losses and its control was of immense economic importance. Dr. Grewal said that repeat breeding was a common constraint in Dairy Farming Research in this area. With a view to establishing various causes and methods of treatment needed to be intensified.

Dr. K.S. Nandpuri, Director of Extension Education said that his Directorate organized several Refresher Training Courses in Animal Care for the farmers during the year. He further told that a Package of Practices for Care and Maintenance of Farm Animals would be brought out. He hoped that the discussions between the Animal Experts and the field staff would greatly help in solving the Animal Husbandry problems.

New varieties of crops evolved at HAU

The scientists of Haryana Agricultural University have evolved four new varieties. These varieties, Desi Cotton variety DS-1, Arhar variety H-77-216 (Manak), Urd variety UH-80-7 (Pragati) and Maize variety Ageti-76, have been recommended for general cultivation in the state by the State variety Release Sub-committee.

Desi cotton variety/ DS-1 is tolerant to drought and hence has been recommended for Sirsa district only. This variety is highly resistant to Jassid and moderately resistant to spotted boll worm and pink boll worm. This variety matures in 170-185 days and gives 15-20 per cent higher yield than the earlier varieties.

Arhar variety H-77-216 (Manak) has been recommended for the whole of Haryana. It matures one week earlier than the earlier varieties and is suitable for arhar-wheat rotation. On an average, this variety yields 15-20 quintals/ha.

Similarly, Urd variety UH-80-7 (Pragati) has been recommended for cultivation in whole of Haryana except areas with light sandy soil. It matures in 70-80 days and gives 20 per cent higher yield than previously released variety.

Maize variety Ageti-76 has also been recommended for general cultivation in whole of Haryana State. It matures in 80-90 days and yields 35-40 quintals per hectare. It is a yellow seeded composite possess a reasonable level of tolerance to most of the disease pest of maize.

According to the Vice-Chancellor, Mr. L.D. Kataria, these varieties will further boost the production of cotton, urd, arhar and maize in the State. He further hoped that like other popular varieties of the crops these varieties will also be popular not only among the farmers of the State but among the farmers of adjoining States in near future.

Tractor operated low lift high volume pump designed at TNAU

The Tamilnadu Agricultural University has designed and developed an axial flow pump to make it suitable to be driven by a 35 HP tractor. Like any other tillage implement it can be mounted over the tractor and operated by the power take off (PTO). Hence, movement from one place to another place is easy and also no separate prime mover is required to operate. The pump consists of an impeller, propeller shaft, diffuser and 0.3 metre diameter casing pipe. The impeller should be kept under submergence during operation. It can discharge nearly 12,000 litres of water per minute over a head of 4.3 metres. The speed of operation is 1000 revolutions per minute. The efficiency is 50 per cent. It is suitable for pumping water for irrigation purpose from canals, rivers, farm ponds and drainage works in submerged fields and stagnated areas.

Hydrologists convention inaugurated at HAU

The Vice-Chancellor of Haryana Agricultural University, Mr. L.D. Kataria, inaugurated the IV Annual Convention of the Association of Hydrologists of India at the University Campus recently. Speaking at the special colloquium on "Impact of Water Resources on Agriculture", Mr. Kataria expressed his concern at the waterlogging accumulation of harmful salts and improperly designed feed irrigation system. He pointed out that about 6.5 million hectares of land in India is waterlogged, of which 70% of the area has the problems of salt accumulation particularly the areas where the canal irrigation has made rapid progress. Excessive seepage and deep percolation losses over years have pushed up the sub-soil water-table even within one metre of soil column in the canal column areas and brought unwanted salts to the surface, rendering the area barren.

He made a strong plea for integrated development of water resources, efficiency management methods of conveyance and distribution of water on the farm, judicious method of water application, proper soil management practices and crppping patterns for high water use efficiency, scientific timing of irrigation according to the development rhythm of the plan and the removal of excess water.

More than 90 experts from remote sensing agencies, meteorological organisations, hydrologists and scientists from geophysics discipline, participated in the convention.

News from UGC

Thirty-eight universities and institutions introduce job oriented courses

Thirty-four Universities and four Institutions deemed to be Universities have taken steps to introduce Job Oriented/Vocational Courses either in pursuance of the University Grants Commission's Scheme of restructuring courses at degree level or independently at degree and postgraduate levels.

The scheme of restructuring of courses was initiated during the fifth plan, with a view to making first degree courses more relevant to local/regional needs. The key concept underlying the scheme is to remodel the existing conventional three subject courses at the first degree level by courses comprising two of the existing subjects together with a third subject having a direct relevance to Job/Practical work for a vocation. Sixteen Universities and one institution deemed to be university have so far introduced such 'Job Oriented' courses as a part of restructuring of courses in the degree/diploma programmes. These courses include varied fields as Agriculture and Environment, Horticulture, Rural Banking, Agriculture & Marketing, Tourism & Hotel Management, Photography, Applied Electronics or Industrial Physics, Industrial Chemistry, Computer Science, T.V. and Radio Designing and Servicing, Airconditioning & Refrigeration Engg., Building constructions and Town Planning, Business Management and Labour Welfare, Farm Management and Community Development, Agro Chemicals and Pest Control, Nutrition and Health Education, Industrial Relations and Personal Management, Office Management and Secretarial Practice, Home Science, Automobile Engineering, Insurance and Salesmanship, Accounting and Taxation, Livestock and Leather, Textile dyeing and printing and Handicraft & Cottage Industries, etc. These Universities are: Bhopal, Kerala, Calcutta, Delhi, Jammu, Kakatiya, Kurukshetra, Madras, NEHU, Nagarjuna, Osmania, Rajasthan, Shivaji, Vikram, Visva-Bharati, SNDT Women's Bombay and Dayal Bagh Educational Institute, Agra, (deemed to be university).

Twenty two universities and three institutions deemed to be universities have introduced Vocation-Oriented Courses at degree & postgraduate levels independently of UGC Scheme of restructuring of courses. These 22 universities are: Agra, Bhavnagar, Cochin, Dibrugarh, Guru Nanak Dev, Garhwal, Gujarat, Himachal Pradesh, Himachal Pradesh Agricultural, Jammu, Jodhpur, Kashmir, Madurai Kamaraj, Marathwada, Marathwara Agricultural, Punjabi, Sardar Patel, Shivaji, Saurashtra, SNDT, Utkal & Vikram. Three institutions deemed to be universities which have introduced such courses independently are: Gandhigram Rural Institute, Indian Institute of Science, Bangalore and Tata Institute of Social Sciences, Bombay. Out of these four universities, namely, Jammu, Shivaji, Vikram & SNDT have introduced such courses both under the UGC scheme and also independently. The courses include Agricultural Marketing, Village Industries, Naval Architecture & Ship Building, Polymer and Rubber Technology, Banking & Commerce, Industrial Fisheries, Computer Application, Horticulture, Petroleum Technology, Soaps and Detergents, Cooperative Management, Sanitary Export, Management & Textiles & Textiles Printing etc.

INSAT-1B Programme of UGC

Between Ist and 10th July, 1985, the following schedule of telecasts on higher education through INSAT-IB under the auspices of the University Grants Commission will be observed. The programme is of one hour duration every day from 12.45 p.m. to 1.45 p.m. (Repeated from 4 p.m. to 5 p.m.) and will be available on the TV network throughout the country. For the viewers in Delhi and surrounding areas, these programmes can be seen on the second channel.

1.7.85

"Lord Kelvin's Clock"
"Brown Treasure"
"The Strong Locks of Nature"

2.7.85

"Tuffy—The Sea Teacher"
"Industrial Quality Control"
"Research for Tomorrow"

3.7.85

"The Wave Particle Paradox."
"Cosmic Chronicle."
"Cathode ray Oscilloscope."

4.7.85

"Images of Einstein"
"Einsteins Belief"
"Safety First"

5.7.85

"Zeopost"
"Microlevel Planning"
"Art of Ukraine"

6.7.85

"The Pure Gamete"
"Green Fire :
"Photosynthesis"
"Prevention of Goitre"

7.7.85 (Sunday)

No telecast

8.7.85

"Systems-IV"
"Condemned to Progress"
"Green Land Ice"

9.7.85

"Sick Ocean"
"Introduction to Computers III"
"Images of Life"

10.7.85

"Systems—Part 5"
"History of Clothing-I"
"I Need Your Love"

CALENDAR OF EVENTS

Proposed Dates of the Event	Title	Objective	Name of the Organising Department	Name of the Organising Secretary/Officer to be contacted
July 1-21, 1985	UGC sponsored short-term Institute on Polymer Science/Technology for teachers in Science and Engineering Colleges.	To impart training in theoretical and practical aspects of Polymer Science/Technology to teachers and research Scientists making use of the large facilities possessed by the Department.	Department of Polymer Science & Rubber Technology, University of Cochin, Cochin-22.	Dr. D. Joseph Francis Professor & Head Department of Polymer Science & Rubber Technology, University of Cochin, Cochin-22.
July 29-Aug 24, 1985	UGC Sponsored Summer Institute on "Computer Aided Numerical Analysis and Operations Research".	To familiarize the teachers on the programming languages and their applications; to encourage researchers to take-up real and sophisticated research problems which require computational techniques.	Department of Mathematics & Statistics, University of Cochin, Cochin-22.	Dr. T. Thrivikraman Department of Mathematics & Statistics, University of Cochin, Cochin-22.
August 5-Nov 29, 1985	Course on Remote Sensing and its applications to various-themes such as Water resources, Mineral resources, Terrain evaluation and Land use planning	To train middle level in-service engineers and scientists in the area of fundamentals of satellite remote sensing and its application	Centre of Studies in Resources Engineering, I.I.T. Bombay.	Dr T.V. Pavate, Chief Project Engineer, Training Extension and Project Cell, I.I.T., Bombay.
September 9-12, 1985	UGC Sponsored All India Symposium on Recent Trends in Insect Endocrinology	—	Department of Zoology, Govt. College, Ajmer.	Shri J.N. Mathur, Director
September 26-28, 1985	UGC Sponsored National Seminar on "Behaviour Modification and Mental Health"	To investigate efficacy of suitable Behaviour Modification teachings in our Culture and Application of Behaviour Modification teachings in different areas of Mental Health.	Deptt. of Psychology, Dayalbagh Educational Institute, Agra.	Dr. (Miss) S.P. Sinha, Reader & Head, Deptt. of Psychology.
November 28-29, 1985	**International Conference on New Technologies in Higher Education**	**To assess the possibilities of the now available new technologies in the background of the broad social and cultural context and the state and trends of Higher Education in India and other developing countries**	**Association of Indian Universities, IIT/Delhi, JNU, Jamia Millia and University of Delhi**	**Prof. Tapas Mazumdar (JNU), Prof. S. Shukla (Jamia Millia), Prof. L.R. Shah (JNU)**
December 12-14, 1985	Asia Pacific Symposium on Wind Engineering	Nature of wind and effect on structures and study of damage and its socio economic implications	Civil Engg. Department, University of Roorkee, Roorkee	Dr. S. K. Pathak, Organising Secretary
December 16-18, 1985	Indian Geotechnical Conference	To advance the state of knowledge about the geotechnical engineering and to give definite direction to the future research work	Earthquake Engg. Department, University of Roorkee, Roorkee	Dr. V. H. Joshi, Organising Secretary

Science & Technology Promotion Programmes of Department of Science & Technology

Introduction

A principal activity of the Department of Science and Technology (DST) is the coordination and promotion of S&T activities in several frontier and newly emerging areas of science and technology. This is done through several programmes/schemes implemented in a coordinated manner by the Science & Technology Promotion (STP) Division of DST. The salient features of the programme operated by STP Division are given below. Scientists and engineers are invited to make full use of the opportunities being provided under these programmes....

1. SERC & GRC Schemes for Research Support

The Science & Engineering Research Council (SERC) scheme and the General Research Scheme (GRS) of the department support time bound research projects usually of three years duration in areas which normally do not come under the direct purview of agencies like ICAR, ICMR, UGC, CSIR, etc., and Departments like Atomic Energy, Electronics, Environment, Ocean Development and Space. The objectives of the SERC and GRS schemes are....

(1) SERC: To support frontline research in emerging areas of science and engineering and in interdisciplinary fields. Research programme should be capable of making a significant impact on the scientific scene.

(2) GRS: To provide general research support to scientists on broad basis irrespective of institutions or areas of work so that they would not have to look for assistance from abroad, particularly under specific foreign currency programmes.

2. Thrust Area Programmes (TAPs)

The SERC scheme also encourages research in the identified Thrust Areas through a support mechanism which is more flexible and comprehensive than the one followed for individual research projects. New activities to be supported in Thrust Areas are:

(i) Coordinated research through Thrust Area Programme (TAP)

(ii) Setting up of Research Core Groups or Units

(iii) Training Programmes in identified areas of research, involving Young Scientists

(iv) Setting up of Support Facilities for research.

TAPs include major research programmes to be undertaken by Indian Scientists from different institutions in a coordinated manner, to enable the creating of a significant impact on the Scientific Scene.

**Note: Thrust Area Booklets in Life, Chemical, Physical & Engineering Sciences are separately available.

3. Intensification of Research in High Priority Areas (IRHPA)

This scheme is designed to provide a major conscious support to a few areas of research that have high priority from the viewpoint of advances in fundamental science or can be of great significance for national development. Intensive research in such areas of high priority is promoted by the following mechanism:

(a) Building up of a core group around highly competent Scientist.

(b) Supporting major national R&D programmes involving several institutions and agencies.

(c) By establishing specialised facilities critically required for carrying out research in high priority areas at the national level.

The mechanism of funding under IRHPA is closely related to SERC.

4. Promotion of Scientific Interest in Youth

To encourage involvement of young scientists (approximately 18-35 years age group) in the national S&T development process and to promote their interest in science, the following activities are supported under the Scheme:

(1) Small research and development projects and feasibility studies to promote scientific interest in youth.

(2) Organisation of seminars/symposia on subjects relevant to the promotion and encouragement of scientific interest in youth.

(3) Travel grants to young scientists for attending Training Courses, Summer/Winter Schools in India and abroad.

(4) Publications aimed at promoting scientific interest in youth.

5. Assistance to Professional Bodies and Science Academies

The DST has so far been providing limited support to the professional bodies in the field of Science & Technology and to Science Academies (hereafter called societies). A new scheme has been drawn up for specific provision of financial support to the societies in a manner which will enable these

to take on the extended responsibilities of creating a cohesive integrated scientific community through arranging regular meetings and conferences, publishing high quality journals, encouraging meaningful discussions, organising Science exhibitions etc. in a coordinated manner.

6. Support for Seminars & Symposia in Science & Technology

Financial support under the Scheme is provided for organising Conferences and Seminars as well as for publishing their proceedings.

7. Partial Financial Support for Participation in International Conferences

Partial Financial Assistance towards travel is provided to Scientists for attending international Conferences/Seminars/Workshops etc. The scientists should have an accepted paper for oral presentation in the Conference and/or an invitation to deliver a talk. The Indian National Science Academy (INSA) is already providing such support for Conferences sponsored by International Council of Scientific Unions (ICSU); the support from DST is therefore restricted to only non-ICSU conferences.

8. Futures Research

The objectives of the scheme are to promote research studies on quantitative modelling on various economic and commodity sectors, to examine existing ones and new policy instuments needed in future to foster economic growth through applications of S&T, and also to generate, through seminars and workshops, awareness to application of anticipatory techniques.

9. Scheme for Development of Scheduled Castes and Scheduled Tribes in Science & Technology Areas

This scheme is for the promotion of Technology for occupations engaging Scheduled Castes, Scheduled Tribes, landless labour and linked occupations. It focusses attention on an area of work requiring a special effort not available under the existing ongoing schemes. In particular, under this Scheme, it is proposed to support specific surveys to identify areas and the required technologies, formulate and implement projects to generate the same and promote programmes for field applications and proto-type development.

10. Science & Technology for Women

This Scheme has two major aspects... first relates to the role of Science and Technology in improving the life, working conditions and opportunities for gainful employment for women and the second to the contribution that women can make to the development of S&T and its application.

Under the scheme it is proposed to formulate an All India Coordinated Project on Development of Technologies to benefit women in general (in reducing drudgery, increasing productivity in their areas of work, opening up of new vocations for them etc.).

11. State Council on Science & Technology

This Scheme was initiated to catalyse the setting up of State Councils on Science & Technology. The main role of those Councils is to act as focal points in the States for Planning, Coordinating, promoting S&T activities within the State.

12. Regional Sophisticated Instrumentation Centres (RSICs)

The RSICs provide sophisticated instrument & equipment facilities to scientists from educational institutions, R&D Laboratories and industry on nominal charges. Scientists & Engineers are requested to make full use of these opportunities being provided under the DST programmes for S&T promotion.

Seven such centres have been established and are operational at :

(1) Indian Institute of Technology, Bombay
(2) Indian Institute of Technology, Madras
(3) Bose Institute, Calcutta
(4) Central Drug Research Institute, Lucknow
(5) Panjab University, Chandigarh
(6) North Eastern Hill University, Shillong
(7) Nagpur University, Nagpur

(Note : Detailed booklet is separately available)

For details and application forms please contact :

Adviser, Science & Technology Promotion Division
Department of Science & Technology
New Mehrauli Road
New Delhi 110 016
Telephone : **662260**
Telex : **031-2096 DST IN**
Telegram : **SCIENCTECH**

JAMIA MILLIA ISLAMIA

Jamia Nagar, NEW DELHI-110025

No. 2/1985-86

ADMISSION NOTICE

Admissions are open to the following Courses for the academic year 1985-86 :

A. FACULTY OF ENGINEERING & TECHNOLOGY : (1) B.Sc. Engineering in Civil, Electrical, and Mechanical; (2) B.E. (Civil) Evening Course; (3) Diploma in Civil Engg.; (4) Diploma in Civil Engg. with specialisation in Building Services & Maintenance; (5) Diploma in Electronics; (6) Certificate in : (i) Draughtsmanship (Mech.), (ii) Electronics, and (iii) Refrigeration and Air-Conditioning; (7) Diploma in Air-Craft Maintenance Engg.; and (8) Diploma in Air-Craft Technician.

B. FACULTY OF EDUCATION : (1) Ph.D. (Education); (2) M.Phil; (3) M.Ed. (Full-time and Part-time); (4) M.A. (Education); (5) Master of Fine Arts (M.F.A.); (6) Advanced Diploma in Special Education; (7) B.Ed.; (8) Bachelor of Fine Arts (B.F.A.); (9) B.A. (Hons.) in Art & Art Education; and (10) Diploma in Basic Training.

C. FACULTY OF HUMANITIES & LANGUAGES, FACULTY OF SOCIAL SCIENCES and FACULTY OF NATURAL SCIENCES :

(1) Ph.D. : Faculty of Humanities and Languages : Arabic, English, Hindi, History, Islamic Studies, Persian, Urdu; Faculty of Social Sciences : Economics, Political Science, Social Work, Sociology, Commerce, and Psychology; Faculty of Natural Sciences: Physics, Chemistry, Mathematics, and Geography.

(2) M.A. : Arabic, Economics, English, Geography, Hindi, History, Islamic Studies, Mathematics, Persian, Political Science, Social Work, Sociology, and Urdu.

(3) M.Sc. : Physics of Materials, Chemistry of Materials, Mathematics with Computer Science, Biological Science, and Geography.

(4) B.A. (Hons.) : Arabic, Economics, English, Geography, Hindi, History, Islamic Studies, Mathematics, Persian, Political Science, Social Work, Sociology, Psychology, and Urdu.

(5) B.Sc. (Hons.) : Physics, Chemistry, Mathematics, and Geography.

(6) B.Com. (Hons.). (7) B.A. and B.Sc. (Pass).

(8) Post-graduate Diploma in Cartography.

(9) Diploma in Modern Arabic (Evening Course).

(10) Certificate in Modern Arabic (Evening Course).

(11) Proficiency in Arabic (Evening Course).

(12) Diploma in Urdu Language Proficiency (for foreign students only).

D. MASS COMMUNICATIONS RESEARCH CENTRE : M.A. in Mass Communication (radio, television, and film).

E. SCHOOLS : (1) Jamia Senior Secondary School (10+2): (i) Secondary School Certificate, (ii) Senior School Certificate : (General Stream—Humanities, Science, and Commerce; Vocational Stream—Commerce, and Engineering); (2) Jamia Middle School; and (3) Jamia Nursery School.

F. CORRESPONDENCE COURSE IN URDU (through the medium of Hindi and English).

PROSPECTUS ALONGWITH ADMISSION FORMS can be had from the Office of the Registrar, the Deans of the Faculties and Heads of the Departments concerned, or from M/s Maktaba Jamia Ltd., Jamia Nagar, New Delhi-25, on any working day between 10.00 a.m. to 4.00 p.m. on cash payment of Rs. 5/- or by sending a crossed Postal Order of Rs. 7/- payable to Jamia Millia Islamia, New Delhi. The Prospectus will be sent Under Certificate of Posting.

The Prospectus alongwith Admission Forms will be available w.e.f. 1st July, 1985. The last date for submission of application forms for different courses is mentioned in the Prospectus. Applications submitted after the last date shall not be accepted.

The Prospectus for Mass Communications Research Centre is separately available.

Zamir Hasan
Offg. **REGISTRAR**

AIU Library & Documentation Services

One of the important functions of the Association of Indian Universities is to act as a clearing house of information on higher education in the country. Towards this end the AIU Library is engaged in collection, building and developing instruments for the dissemination of research information. Over the years a valuable collection of books and documents on different aspects of higher education has been acquired.

The Library has also developed Bibliography of Doctoral Dissertations as an effective tool in the dissemination of research information. Retrospective bibliographies covering the period 1857-1970 and 1970-75 were the first to appear. Effective 1975, however, the bibliography is issued annually in two volumes. One volume deals with Natural and Applied Sciences while the other records doctoral degrees awarded in Social Sciences and the Humanities. In addition to the normal bibliographical details like the name of the Research Scholar, the title of the thesis, years of registration for and award of the degree, and the name of the University accepting the thesis for award of a doctoral degree, the bibliography also gives name and complete address of the supervising teacher and an availability note that seeks to inform whether a copy of the dissertation is available for consultation and use in the University Library/Department or Registrar's Office.

The columns 'Theses of the Month' and 'Research in Progress' are intended to cut out the time lag between the receipt of information and its inclusion in bibliography. Such Universities as are not sending us regular information in respect of Doctoral Theses accepted and research scholars enrolled are welcome to make use of these columns.

The Library is situated at 17-B, Indraprastha Marg, New Delhi-110002. It is open from 9.30 a.m. to 5.30 p.m. Monday through Friday.

RESEARCH IN PROGRESS

A list of Research Scholars Registered for Doctoral Degrees of Indian Universities

SOCIAL SCIENCES

Library Science

1. Kawatra, P.S. *A survey of users attitudes towards the resources and services of three University libraries in Rajasthan.* U Raj, Jaipur. Dr. (Mrs.) Pushpa Dhyan.

2. Kewal Jit Singh. *Network model for resource sharing in Indian University.* Pb U, Chandigarh. Dr. U.K. Tikku.

3. Sud, Neelam. *The role of libraries in adult education in India.* Pb U, Chandigarh. Dr. U.K. Tikku.

Psychology

1. Rana, Arju. *A cross cultural study of Indian and Nepalese managers: Job satisfaction in relation to managerial style, quality of working life, personality, locus of control and need satisfaction.* Pb U, Chandigarh. Dr. Meena Sehgal.

2. Sharma, Archna. *An experimental study of psychomotor performance and reminiscence as determined by personality, intelligence, sex and practice.* Pb U, Chandigarh. Dr. Jitendra Mohan.

Sociology

1. Jagnayak, S.S. *Role of libraries in the socio-economic cultural and educational development among rural people.* U Ker, Trivandrum. Dr. Indukumari.

2. Sudev, P.B. *Impact of social mobility on fertility.* U Ker, Trivandrum. Dr. K. Krishna Kumari.

Political Science

1. Pirthani Shiv Prakash. *Swami Vivekanand ke rajnitik vicharon ka vivechanatmak adhyayan.* Devi Ahilya, Indore. Dr. Om Nagpal.

Economics

1. Chakravarty, Ruma. *Fiscal policy of the Government of Manipur,* 1966-85. Mani U, Imphal. Dr. H. Nabakishore Singh.

2. Mohammad Ashraf Ali. *Economic history of Manipur,* 1801—1950-51. Mani U, Imphal. Dr. L. Tombi Singh.

3. Rajendran, G.K. *Rural credit market in Kerala: Structure, linkages and growth.* U Ker, Trivandrum. Dr. P.R. Gopinathan Nair.

4. Singh, W. Iboyaima. *Studies in the economic life of the scheduled caste people in Manipur with special reference to the Lois and Paithibis.* Mani U, Imphal.

5. Venugopalan, V.S. *Financing agricultural development in Kerala : The role of lead banks.* U Ker, Trivandrum. Dr. G. Krishnankutty and Dr. M.R. Gopalakrishnan Nair.

Education

1. Abdul Samad. *Study of organizational climate of government high schools of Chandigarh and its effect on job satisfaction of teachers.* Pb U, Chandigarh. Dr. (Mrs.) I.P. Sharma.

2. Ahari, Aladin Etemad. *Role of islamic government in the development of higher education in Iran as perceived by university administrators.* Pb U, Chandigarh. Dr. Harish Sharma.

3. Amarjit Kaur. *Development of professional competency of social studies and mathematics teachers as related to process and structure variables of educational environment in Government in service training centres.* Pb U, Chandigarh. Prof. J.N. Joshi.

4. Bellarmine, Robert. *Variation of methodology and its causes in the interface of theory and practice : A case study of material producers under the structural approach.* CIEFL, Hyderabad. Prof. R.N. Ghosh.

5. Brar, Rachhpal Singh. *Effects of two intermittent running methods with two varying durations and recovery types on acrobic and anaerobic capacities and running performance.* Pb U, Chandigarh. Sh. G.S. Sandhu.

6. Datta, Chitra. *Effects of maximizing contextual clues.* CIEFL, Hyderabad. Prof. R.N. Ghosh.

7. David, Annie. *The teaching of english syntax at the advanced level.* CIEFL. Hyderabad. Dr. B.N. Koul.

8. Davinder Kaur. *Effects of structural organisation of instructional material on concept learning among seventh grade students in relation to cognitive style and locus of control.* Pb U, Chandigarh, Dr. (Mrs.) S. Gakhar and Prof. R. Murlidharan.

9. Gandhi, Sawinder. *Comparative effects of isomatrics, calisthenics and yoga physical culture on the physical fitness status of high school girls.* Pb U, Chandigarh. Prof. (Mrs.) S. Bambah.

10. Gautam, Vimal Kumar. *Preparation and validating some remedial measures in the selected areas in Physics of IX standard students.* Devi Ahilya, Indore. Dr. P.C. Katiyar.

11. Gurpreet Kaur. *Styles of learning personality and locus of control as predictors of academic achievement and over and under achievement.* Pb U, Chandigarh. Dr. (Mrs.) Tehal Kohli.

12. Hardayal Singh. *Assessment of motor abilities of Indian boys age group 10-16 years.* Pb U, Chandigarh. Dr. N.N. Mall and Prof. (Mrs.) S. Bambah.

13. Kettate, Boonyong. *A comparative study of socio cultural and educational conditions in the North Eastern Region of Thailand and India.* Pb U, Chandigarh. Dr. Harish Sharma.

14. Khalwania, N.S. *Effectiveness of concept based science curriculum in developing cognitive structures and acquisition of process skills among high school students.* Pb U, Chandigarh. Dr. G.S. Sodhi.

15. Khanna, Kusum. *Effect of environmental resonance and dissonance in home and school on values of pre-university, students in relation to sex personality and SES.* Pb U, Chandigarh. Dr. Anand Bhushan.

16. Kumar, Karuna. *The development of study skills and problem solving skills through an english medium inter-disciplinary unit introduced into a regional medium situation: A model of bilingual education.* CIEFL, Hyderabad. Prof. R.N. Ghosh.

17. Kundu, Manmatha. *Teaching english to tribal learners in Orissa : The use of ethnically oriented instructional strategies to influence learning attitudes and laguage skills.* CIEFL, Hyderabad. Prof. R.N. Ghosh.

18. Kusum Lata. *Effect of early stimulation on disadvantaged infants at different levels of developmental handicaps.* Pb U, Chandigarh. Dr. (Mrs.) Tehal Kohli.

19. Mathema, Sunder Shyam Bhagat. *Wastage in teacher education in secondary schools of Nepal as related to personality, vocational aspirations and attitude towards intelligence, teaching of drop-outs from profession.* Pb U, Chandigarh. Dr. (Mrs.) Asha Sethi.

20. Mohammad Waliul Islam. *A study of cost effectiveness of polytechnic education in Bangladesh.* Pb U, Chandigarh. Dr. (Mrs.) I.P. Sharma.

21. Mohammad Zahangir Ali. *Effect of career awareness and self exploration on career maturity of undecided group of early adolescents of Dhaka District in Bangladesh.* Pb U, Chandigarh. Dr. (Mrs.) Tohal Zohli.

22. Mukherjee, Jayashree. *Oral comprehension and note-taking as means of acquiring subject knowledge : A critical study at the undergraduate level in an english medium situation, and suggestions for the necessary instructional inputs.* CIEFL, Hyderabad. Prof. R.N. Ghosh. and Mr. Jacob Tharu.

23. Mustafa, S.N. *An analysis of current thinking in the field of discourse studies towards designing reading courses for undergraduate with special reference to their academic needs.* CIEFL, Hyderabad. Prof. M.L. Tickoo.

24. Paramjeet. *A study of the development of primary education in Punjab since independence.* Pb U, Chandigarh. Dr. (Mrs.) I.P. Sharma.

25. Pourghaz, Abdol Vahab. *A casual and comparative study of the status of school education in rural and urban areas of Mazanderan Province of Iran.* Pb U, Chandigarh. Dr. (Mrs.) B.K. Saini.

26. Prahlad, S.R. *An examination of certain issues arising out of a schematheoretic view of reading.* CIEFL, Hyderabad. Dr. B.N. Koul.

27. Pramanik, T.K. *A study of some affective variables related to learning english as a second language at the post secondary stage in Orissa.* CIEFL, Hyderabad. Prof. R.N. Ghosh.

28. Rajinder Singh. *Relationship of soma-top type components to personality traits and selected motor ability variables among secondary school boys.* Pb U, Chandigarh. Prof. (Mrs) S. Bambah.

29. Roy, Chhanda. *The preparation of college and university teachers of english in India: A socio philosophical treatise.* CIEFL, Hyderabad. Dr. B.N. Koul.

30. Sasikumaran, V. *Towards designing on accelerated course in english for secondary schools.* CIEFL, Hyderabad. Prof. M.L. Tickoo.

31. Sharma, Narinder Paul. *Specific physical fitness tests for soccer platers.* Pb U, Chandigarh. Dr. N.N. Mall and Dr. Harnam Singh.

32. Shashi Kala. *Relationship of selected psychological variables with attitude towards teaching of traditional and model school teachers.* Pb U, Chandigarh. Dr. S.C. Gakhar.

33. Singh, V.D. *A study of the linguistic and communcative abilities of high school teachers of english in relation to their classroom functions.* CIEFL, Hyderabad. Prof. M.L. Tickoo.

34. Susairaj, Nirmala. *A study in creative reading towards an advanced reading course for english medium degree students.* CIEFL, Hyderabad. Dr. B.N. Koul.

35. Sushma Kumari. *Study of personality characteristics, intelligence, achievement motivation adjustment and socio-economic status of juvenile and adult female offenders.* Pb U, Chandigarh. Dr. Harish Sharma.

36. Vydehi, M. *Distance education.* CIEFL, Hyderabad. Dr. B. N. Koul.

37. Yadav, Girdhari Lal. *To compare the effects of individualised and conventional instructions on students achievement in relation to personality types, intelligence and levels of thinking.* Pb U, Chandigarh. Dr. G.S. Sodhi.

Commerce

1. Kallu Rao, Paga. *Working of state industrial development corporations in India.* Mani U, Imphal. Dr. P.N. Mishra.

HUMANITIES

Philosophy

1. Beevi, R. Sulikha. *A comparative study of nature and destiny of man in Tagore and Ighal.* U Ker, Trivandrum. Dr. K. Saratchandran.

2. Padmakumar, G. *Concept of freedom in existentialism.* U Ker, Trivandrum. Dr. K. Saratchandran.

3. Shorly, N.R. *Ordinary language philosophy: A study.* U Ker, Trivandrum. Dr. D. Nosy.

Religion

1. Prithipal Singh. *Baba Sahib Singh Bedi and his times, 1756-1834.* Pb U, Chandigarh. Dr. Darshan Singh.

Language & Literature

English

1. Badlani, Rajni. *Certain theoretical aspects of pedagogic grammars.* CIEFL, Hyderabad. Dr. S.K. Verma.

2. Bal, Bijoy Kumar. *Order of the acquisition of synthetic structures of english by Oriya learners.* CIEFL, Hyderabad. Dr. R. Amritavalli.

3. Chari, Hemalatha. *A textual study of 'Hades' and an interpretation of its bearing on a critical study of the episode.* CIEFL, Hyderabad. Dr. S.V. Pradhan.

4. Chaudhary, S.C. *Some aspects of the phonology of Indian english.* CIEFL, Hyderabad. Prof. M.V. Nadkarni and Dr. K. G. Vijayakrishnan.

5. Goel, Promilla. *The freedom movement and the Indo Anglian novels.* Pb U, Chandigarh. Prof. (Mrs.) Nirmal Mukherjee.

6. Gokhale, S.B. *Prosodic systems in Marathi and Marathi english.* CIEFL, Hyderabad. Prof. R.K. Bansal.

7. Gurtu, Madhu. *Anaphoric relations in hindi and english.* CIEFL, Hyderabad. Dr. S.K. Verma and Dr. K.A. Jayasheelan.

8. Hosali, Priyadarshini S. *Butler english: Form and function.* CIEFL, Hyderabad. Prof. S.K. Verma.

9. Jayaraman, R.K. *A contrastive grammar of the complex sentence structures in Khasi and english.* CIEFL, Hyderabad. Prof. M.V. Nadkarni.

10. Kannabirian, Vasanta. *A study of the emergence of nationalism in Indian writing in english.* CIEFL, Hyderabad. Dr. S.V. Pradhan.

11. Khundrakpam, Sarangajit Singh. *John Crowe Ransom as a literary critic.* Mani U, Imphal. Dr.S.K. Tickoo.

12. Kulkarni, R.V. *Complex sentences in english and marathi.* CIEFL, Hyderabad. Dr. K.S. Yadurajan.

13. Manoharmayum, Sunita. *Mysticism in Emily Bronte's works.* Mani U, Imphal. Shri N. Khagendra Singh.

14. Murali, S. *The mantra of vision: Sri Aurobindo's concept of overhead poetry.* U Ker, Trivandrum. Dr. K. Ayyappa Panicker.

15. Panigrahi, P.K. *Indian writing in english.* CIEFL, Hyderabad. Dr.(Mrs.) Susie J. Tharu.

16 Pitchai, J. Anthony. *English spoken in Tamil Nadu: Aphonological study with reference to source and target languages.* CIEFL, Hyderabad. Dr. B.A. Prabhakarbabu.

17. Priyalata Devi, R.K. *Religious centrality in the plays of T.S. Eliot.* Mani U, Imphal. Shri N. Khagendra Singh.

18. Rengaramanujam, P. *Marxist critiques of modernism: A reconsideration.* CIEFL, Hyderabad. Dr. S. V. Pradhan.

19. Sadanand, Kamlesh. *The use of english in industries in Andhra Pradesh: A sociolinguistic study.* CIEFL, Hyderabad. Prof. S.K. Verma.

20. Seetha, R. *A phonological study of english spoken in Pondicherry.* CIEFL, Hyderabad. Dr. M.V. Nadkarni.

21. Sehgal, Indra Rani. *The women question in Thomas Hardy and D.H. Lawrence: A comparative sociological literacy analysis* Pb U, Chandigarh. Prof. M.L. Raina.

22. Sharma, Rajendra Dutt. *Eaudelaire and Eliot: A comparative study of Urban images.* Pb U, Chandigarh. Dr. Kiran Sahni.

23. Upendran, S. *Language acquisition with reference to phonology.* CIEFL, Hyderabad. Dr. K.G. Vijayakrishnan.

Punjab

1. Chetan Singh. *Bhai Vir Singh dee vartak chintan dee shaili.* Pb U, Chandigarh. Dr. Kesar Singh Kesar.

2. Gurinder Kaur. *Concept of man in the poetry of Sultan Babu.* Pb U, Chandigarh. Prof. Attar Singh.

3. Krishan Singh. *Adi Granth dee bhagat da kalatmak adhyayan.* Pb U, Chandigarh. Prof. Attar Singh.

4. Kuljit Kaur. *Sujan Singh dee kahani kala da adhyayan.* Pb U, Chandigarh. Dr. Kesar Singh Kesar.

5. Labh Singh. *Punjabi kavishri da rupak vivechan Malvai parampara de sandarbh'ch.* Pb U, Chandigarh. Prof. Kartar Singh Suri.

6. Manjit Kaur. *Shiv Kumar dee kav bimbavali da sanskritik te suhajatmak adhyayan.* Pb U, Chandigarh. Dr. Kesar Singh Kesar.

7. Mehta, Inder Pal. *Sant Ravi Dass atė Meera Bai: Ik tulnatmak adhyayan.* Pb U, Chandigarh. Prof. D.P. Singhal.

8. Nanda, Balbir Singh. *Exegetics of Gurbani with reference to Var Asa Mahalla I.* Pb U, Chandigarh. Dr. Darshan Singh.

9. Nanda, Jatinder Bir Singh. *Bhai Vir Singh de kav rachna da sidhantik pichhokar.* Pb U, Chandigarh. Dr. Parshan Singh.

10. Thaker Singh. *Guru Nanak kav vich bhagati sadhna.* Pb U, Chandigarh. Dr. Amarjit Singh Dua.

Hindi

1. Arora, Mukesh Kumar. *Agyeya kee kavya bhasha aur katha bhasha ka tulnatmak adhyayan.* Pb U, Chandigarh. Dr. Jaya Prakash.

2. Bedi, Kiran. *Aathven dashak kee hindi kahani mein alagav bodh.* Pb U, Chandigarh. Prof. D.P. Maini.

3. Dharam Singh. *Manviya gunparak sangyaon ka vishleshnatmak adhyayan.* Pb U, Chandigarh. Prof. D.P. Maini.

4. Saxena, Sudha. *Rangamanch kee drishti se aathven dashak ka natya-sahitya* 1970 *sė* 1980 *tak.* Pb U, Chandigarh. Dr.V.P. Mehadiratta.

5. Sharma, Kailash. *Hindi upanyason mein samajik avem vyaktik samasyaen,* 1960 *se aaj tak.* Pb U, Chandigarh. Dr. Yash Gulati.

6. Sharma, Mahima. *Aacharya Hazari Prasad Dwivedi ke upnyason mein ragatmak sambandh: Tantrik paripreksh.* Pb U, Chandigarh. Dr. Paresh.

7. Sharma, Meenaxi. *Ganesh Singh Bedi ka sahitya: Swaroop aur moolyankan.* Pb U, Chandigarh. Dr. Jaya Prakash.

Arabic

1. Syed Bashir Ahmad. *A critical study of Sayyed Qutb as a modern writer in the light of his works and literary achievements.* CIEFL, Hyderabad. Prof. A.H. Nadvi.

Manipuri

1. Koijam, Shantibala Devi. *Social problems in modern manipuri drama.* Mani U, Imphal. Shri Ch. Manihar Singh.

History

1. Brajamohan Singh. *Society and culture in 19th century Manipur.* Mani U, Imphal. Shri G. Kabui.

2. Dixit, Mangala. *Bharat mein arthik niyojan ka itihas.* HS Gour, Sagar. Dr. G.S. Tripathi.

3. Gupta, Subhash Kumar. *Gandhi and the Indian National Congress,* 1915-1934. Pb U, Chandigarh. Dr. (Mrs.) Rashmi Sudha Puri.

4. Jote, Gaggan. *The nature of kingship in medieval Rajasthan: An historical study from* 1200-1700 *A.D.*. Pb U, Chandigarh. Dr. (Mrs.) Karuna Goswamy.

5. Kanwarjit Singh. *Perspectives on sikh political philosophy and ethics.* Pb U, Chandigarh. Dr. Darshan Singh and Dr. Mohinder Singh.

6. Maimom, Shanti Devi. *Impact of Western education on Manipur' society: A historical study.* Mani U, Imphal Dr. S.N. Pandey.

7. Michael Ginzasuan. *Studies on cultural history of the Zous in Manipur.* Mani U, Imphal. Dr. Lal Dena.

8. Muhammad Nizamuddin. *A critical study of the coins of the Sultans and Emperors of Delhi.* BHU, Varanasi. Dr. S.K. Srivastava.

9. Naorem, Lokendna Singh. *Socio-economic roots of popular political movements in colonial Manipur Valley,* 1891-1950: *Aspects of social history.* Mani U, Imphal. Dr. S.N. Pandey.

10. Nengkhanpau Hauzel. *History and culture of the Paite Tribe.* Mani U, Imphal. D . S.N. Pandey.

11. Ramakrishna, Bapat Pravin. *Freedom movement in Belgaum District.* Shivaji U, Kolhapur. Dr. B.R. Kamble.

12. Rishi, Om Datta. *Military strategy and tactics evolution and development,* 1945-1975. HS Gour, Sagar. Prof. B.N. Sharma.

13. Sindhu, Ratna Kul Bhaskar. *World trade system and Indico: A case study of India and China during the* 18*th and* 19*th Centuries.* Pb U, Chandigarh. Dr. J.L. Mehta.

14. Yadav, Badri Prasad. *Mahakavya kaleen Bharat mein istriyon kee dasha.* HS Gour, Sagar. Dr. B.N, Sharma.

THESES OF THE MONTH

A list of Doctoral Theses Accepted by Indian Universities

SOCIAL SCIENCES

Psychology

1. Desai, Saryu Dhirubhai. *An experimental study of some technique to reduce resistance to persuasion.* MSU, Baroda.
2. Halyal, Parappa Shankarappa. *Generation gap: Comparison of attitudinal modernity of college student and their parents.* Kar U, Dharwad.
3. Manohar, Ravindra M. *Existentialists conception of man: A critical study in the light of psychoanalytic and marxist perspectives.* U Poona.
4. Massey, Rajiv R.K. *A study of managerial stress with special reference to certain psychological needs.* IIT, Kharagpur.
5. Mishra, Babban. *Development of pragmatic strategy in word order of hindi locative propositions.* Utkal U, Bhubaneshwar.
6. Pramod Kumar. *Cognitive styles of the P.G. students in different streams of university education.* HS Gour, Sagar.

Sociology

1. Misra, Dalji. *Consequences of emigration from rural areas of Uttar Pradesh: A sociological study.* RKV, Bareilly.
2. Saha, Arunodaya. *A study of the influence of factors in the cultural environment on industrial productivity in Japan and India.* IIT, Kharagpur.
3. Verma, Vinay Kumar. *Participation of tribal women in decision making process related to animal husbandary practices.* Birsa Agrl., Ranchi.
4. Yadav, Krishandas. *A study of inter-relation between adoption of improved technology in agriculture and social change in rural areas of Indore Division, M.P.* Devi Ahilya, Indore.

Social Anthropology

1. Nayak, Prasanna Kumar. *Structure and function of clan feud among the Dongria Kondh.* Utkal U, Bhubaneshwar.

Social Work

1. Shariff, Iqbal Ahamed. *Psycho social problems of young learners: Social work perspective.* Kar U, Dharwad.

Political Science

1. Agarwal, Kiran Bala. *Reorganisation of the North East: A study.* Mag U, Bodh Gaya.
2. Amatya, Panna Kaji. *Nepal's relations with India: Decade of Birendra era,* 1972-1981. U Poona.
3. Jain, Rajendra Kumar. *Continuity and change in West German foreign policy: A study of the Ostpolitik,* 1969-1978. JNU, Delhi.
4. Jhanvar, Vijay Kumar. *Loknayak Jayaprakash Narayan evam unki sampurn kranti ka darshan.* Devi Ahilya, Indore.
5. Mriyappa. *The politics of conversion with special reference to the scheduled castes.* Kar U, Dharwad.
6. Pandey, Babu Lal. *Congress dal ka vibhajan san* 1969 *evam rashtriya rajniti per uska prabhav.* APSU, Rewa.
7. Raveendran, G. *Formulation of the theories of Soviet foreign policy.* Utkal U, Bhubaneshwar.
8. Sen Gupta, Subrata. *European advanced technology: Problems and prospects of its transfer to the third world with special reference to India.* JNU, Delhi.
9. Singh, Bijayendra Prasad. *U.S. Strategy in the Indian Ocean vis-a-vis India's policy.* Mag U, Bodh Gaya.
10. Subramanian, S. *Policing a metropolis, problems and perspectives, Hyderabad City: A case study.* SVU, Tirupati.
11. Surendra Kumar. *Bharatiya samaj mein mukti kee avadharna.* Mag U, Bodh Gaya.

Economics

1. Champati, Mahendra. *Economic aspects of utilisation and pricing of water in Salandi Irrigation Project of Orissa.* Utkal U, Bhubaneshwar.
2. Chourasia, Sheo Prasad. *Sagar sambhag mein krishi yantrikaran: Samasyaen evam sambhavnayen.* HS Gour, Sagar.
3. Dube, Rajiv. *The role of tourism in the economy of Madhya Pradesh.* HS Gour, Sagar
4. Joseph, T. Mary. *The economics of chemical industry in Kerala.* U Cochin.
5. Kolipaka, Janaki. *Impact of rural orientations of expansion of bank's costs and earning.* U Poona.
6. Rawat, Rameshwar Prasad. *Prabandh mein shramik kee bhagidhari: Madhya Pradesh mein sarvjanik udyogik upkarmon ke vishesh sandarbh mein.* HS Gour, Sagar.
7. Satya Paul. *Some aspects of household consumption and economic inequalities in Panjab.* U Delhi.
8. Surinder Kumar. *Pricing in Public utilities: A study of electricity undertakings in Panjab and Haryana.* JNU, Delhi.
9. Tambe, Mukund R. *Pattern and problems of transport in a sub-region.* U Poona.

Law

1. Ongodia. *The law of water resources, with special reference to the Nile River.* JNU, Delhi.
2. Varkey, A.M. *Administrative control of companies in India.* U Cochin.

Education

1. Dash, Jagannath. *An investigation into the development of teacher education programme in Orissa with reference to motivation, cost structure and quality.* Utkal U, Bhubaneshwar.
2. Fernandes, Lydia. *The effect of guidance and counselling on the academic achievement of underachieving preadolescent and adolscent girls.* U Mysore.
3. Jha, Jai Shanker. *Personality characteristics, convergence, divergence, traditional-Machiavelli behaviour and level of success of syllabus-bound, syllabus free students.* RKV, Bareilly.
4. Kolhe, Sharad Chandra Phakira. *Construction of attitude scales and measurement of attitudes of students of Jalgaon District towards mathematics.* U Poona.
5. Mishra, Abha. *An evalution of work experience in the secondary schools of Assam.* Gauhati U.
6. Mohanty, Charubala. *Effects of state-trait anxiety on class room leaving and personal adjustment of elementary school pupils.* Utkal U, Bhubaneshwar.
7. Prasad, Surya Nath. *Psycho-diagnosis of maladjustment of pupil teachers and their therapy.* Nagpur U.
8. Radhakrishnan, Kamala. *Educational administration in the state of Tamilnadu with reference to decentralization.* Kar U, Dharwad.
9. Vijaya Lakshmi, G. *A study of the relationship between the perception of sex roles and occupational choices of women students in certain professional and non-professional courses.* SVU, Tirupati.
10. Vikram Jit Singh. *A comparative cost effectiveness study of low-cost audio visual teaching aids and high-cost audio-visual teaching aids.* JNU, Delhi.
11. Yawalkar, Vibhavari Vinayak. *Development of some personality correlates of scientific creativity.* Nagpur U.

Commerce

1. Biswal, Damodar. *Financing the small scale industries in Orissa.* Utkal U, Bhubaneshwar.
2. Krishna Kumar, V. *Behavioural aspects of performance budgeting: A case study of selected commercial banks in India.* U Raj. Jaipur.
3. Surindar, V. *Indian industries: A study in growth, structure and location.* OU, Hyderabad.

Home Science

1. Gopal, Shyama. *Studies on the effect of Karnal bunt, Nevossia India on chemical composition, milling, baking properties and consumer acceptance of wheat.* PAU, Ludhiana.
2. Manjit Kaur. *A comparative study of the preparation of ricotta, Ricotone cheese from the whey of panir using buffalo milk and cow milk.* PAU, Ludhiana.
3. Vanaja, S. *Determinants of child health status and implications for the management of child health services.* U Mysore.

Management

1. Dharma Rajan, P.G. *A study of the cost structure of cashew industry in Kerala, Karntaka and Tamilnadu.* U Cochin.

ANDHRA PRADESH AGRICULTURAL UNIVERSITY

ADMINISTRATIVE OFFICE: RAJENDRANAGAR
HYDERABAD-500 030.

NOTIFICATION

I. Applications are invited for admission to the following Degree Courses for the Academic Year 1985-86.

PART-I

(i) B.V.Sc & A.H., (ii) B.Sc. (Agri.)., (iii) B.Sc. (Horti.) and (iv) B.Sc. (Home Science).

PART-II

(i) B.Tech (Agri. Engg.) and (ii) B.Sc. (Dairy Tech.)

Candidates wishing to apply for one or more courses under Part-I, need to submit only one application indicating their preferences. Similarly those wishing to apply for one or both the courses under Part-II, need to submit only one application. Separate applications are prescribed for courses under Part-I and Part-II.

II. Eligibility for courses under Part-I

Candidates who have passed the Two-Year Intermediate Examination conducted by the Board of Intermediate Education, Andhra Pradesh or equivalent examination with Physics, Chemistry, Botany and Zoology and have secured minimum percentage of marks in those optional subjects as indicated below would be eligible to apply:

Course	Minimum percentage of marks in optional subjects required for eligibility.
(i) B.V. Sc & A.H., B.Sc. (Agri) and B.Sc. (Horti)	....60 per cent.
(ii) B.Sc. (Home Science)	....50 per cent.

Note:

(i) In the case of Scheduled Castes and Scheduled Tribes candidates, 40 per cent is the minimum for eligibility for all the courses.

(ii) Candidates who have passed Intermediate Examination with Vocational Courses in Agriculture, Veterinary and Home Science conducted by the A.P. Board of Intermediate Education are also eligible.

(iii) For B.Sc. (Home Science) candidates with:
  (a) Household Arts or Domestic Science
  (b) Home Science or (c) Mathematics or
  (d) Two-Year Diploma in Domestic Science issued by the State Board of Technical Education and Training, Government of Andhra Pradesh are also eligible.

(iv) Four seats are reserved in B.Sc. (Agri.) for Graduates with first Class in Mathematics, Physics and Chemistry.

III. Eligibility for Courses under Part-II

Candidates who have passed the Two-Year Intermediate Examination conducted by the Board of Intermediate Education, Andhra Pradesh or equivalent Examination with Mathematics, Physics and Chemistry and have secured an aggregate of not less than 70 per cent of marks in these subjects. In the case of Scheduled Caste and Scheduled Tribe candidates the minimum marks for eligibility shall be 50 per cent.

FURTHER DETAILS CAN BE HAD FROM THE PROSPECTUS

Availability of Application Forms :

Applications together with Prospectus can be had from the Principals of the Agricultural College, Bapatla, Guntur District; College of Veterinary Science, Tirupati, Chittoor District; College of Veterinary Science, Rajendranagar, Hyderabad-500 030; College of Home Science, Saifabad, Hyderabad; and at the Andhra Pradesh Agricultural University Research Stations at Warangal, Rudrur, Anantapur, Nandyal, Lam (Guntur) and Anakapalli with effect from 21-6-1985 on payment of Rs. 10/- in person or on payment of Rs. 12-00 (inclusive of Postal Charges) through a crossed Demand Draft drawn from any Nationalised Bank in favour of the Comptroller, Andhra Pradesh Agricultural University, Rajendranagar, drawn on State Bank of Hyderabad, Rajendranagar Branch. **No Postal Orders will be accepted.** In their requisition they must clearly state whether they want to apply for courses under Part-I or under Part-II.

Requisitions for supply of application forms by post will not be accepted after 10-7-1985.

All applications duly filled in should reach the office of the Registrar, Administrative Office, Andhra Pradesh Agricultural University, Rajendranagar, Hyderabad-500 030 on or before 15-7-1985. Postal delays will not be condoned.

G.S.M.D. Khasim
REGISTRAR

MALAVIYA REGIONAL ENGINEERING COLLEGE

JAIPUR

ADMISSION NOTICE

THREE SEMESTER M.E. METALLURGICAL ENGINEERING COURSE

(NON-FERROUS GROUP)

SESSION 1985-86

Applications for admission to three semester M.E. Metallurgical Engineering (Non-Ferrous Group) Course are invited on the prescribed form obtainable on pre-payment of Rs. 15/- (Rupees fifteen only), alongwith admission circular (Rs. 7.50 in the case of SC/ST candidates) either in cash or in the form of a crossed Indian Postal Order payable to the Registrar, Malaviya Regional Engineering College, Jaipur upto 4.00 P.M. on Wednesday the 10th July, 1985 irrespective of whether this day is a working day or a holiday.

Number of seats	Eight (General) plus Three (SC/ST)
Duration of the Course	Three semesters (18 months)

Minimum Qualifications

The candidates for admission to the course must have qualified at the Graduate Aptitude Test in Engineering (GATE) held earlier prior to admission and must have obtained atleast a second Class B.E. Degree in Metallurgical Engineering from the University of Rajasthan or 2nd Class Degree or Diploma from any other University or Institution recognised by the University of Rajasthan as equivalent thereto. Candidates with degree in Mechanical/Chemical Engineering and also candidates with M.Sc. (Physics) or M.Sc. (Chemistry) are eligible for admission subject to certain conditions given in the College circular.

Candidates who have been successful in the GATE but whose results in the qualifying degree examination are yet to be declared are also eligible to apply.

However, their cases will be considered only if their results are declared by the time of admission. Candidates with B.E. qualification and intending to appear for GATE examination will also be considered for admission. However, in their cases, they are eligible for scholarship only from the date they qualify in the GATE examination. Candidates fully sponsored and financed by their employers will be considered for admission without qualifying at the GATE, provided they fulfil minimum prescribed qualifications.

All candidates including the sponsored candidates, who are admitted through GATE will be awarded a scholarship of Rs. 1,000/- p.m. for 18 months. The candidates admitted without qualifying at the GATE are not eligible for scholarship.

K.S. Rathor
REGISTRAR

CENTRAL INSTITUTE OF ENGLISH AND FOREIGN LANGUAGES

HYDERABAD-500007

Advertisement No. V/85

Applications on the prescribed form together with the application fee are invited for the following posts in the Institute service so as to reach the undersigned on or before **31-7-1985.**

I. Professors/Senior Fellows:

(Scale of pay : Rs. 1500-60-1800-100-2000-125/2-2500)

1. Regional Centre, Shillong (one post)
2. Department of Phonetics & Spoken English (one post)
3. Department of Materials Production (one post-leave vacancy)
4. Department of Spanish (one post)

Qualifications

Essential

An eminent scholar with published work of high quality actively engaged in research. About ten years' experience of teaching and/or research. Experience of guiding research at Doctoral level.

OR

An outstanding scholar with established reputation who has made significant contribution to knowledge.

Subject concerned or allied subject

Post Nos. 1 to 3 : English
Post No. 4 : Spanish

Desirable

For Post No. 1

Experience in teacher training. Materials Production and extension work in English.

For Post No. 2

(a) Evidence of research or a research degree in a field connected with the Phonetics of English.

OR

(b) Specialization in Phonetics of English.

OR

(c) Applied Linguistics in relation to English Phonetics.

[In case of (b) and (c), teaching of English with experience in the preparation of teaching materials in Spoken English is desirable]

For Post No. 3

Specialisation in :

(i) ELT materials for schools and colleges.

(ii) E.S.P. ("English for Special Purposes.") materials.

At least 10 years' experience in designing curricula and syllabuses and in producing teaching materials in English.

For Post No. 4

Field of Study : Spanish Literature/ Language

Specialisation

(a) Special training in teaching Spanish as foreign language.

(b) Materials Production.

(c) Experience in organising teacher training programmes at Post Graduate level, symposia.

II. Readers/Fellows

(Scale of Pay : Rs. 1200-50-1300-60-1900)

1. Regional Centre, Shillong (one post)
2. Department of Phonetics & Spoken English (two posts)
3. Department of Methods (one post)
4. Department of English Literature (one post)
5. Department of Radio, TV & Cinematography (two posts)
6. Department of Correspondence Courses (two posts)
7. Department of German (one post)
8. Department of French (one post)
9. Department of Spanish (one post)
10. Department of Linguistics & Contemporary English (one post—temp. vacancy)

Qualifications

Essential

Good academic record with a doctoral degree or equivalent published work. Evidence of being actively engaged in: (i) research or (ii) innovation in teaching methods or (iii) production of teaching materials.

About five years experience of teaching and/or research provided that atleast three of these years were as Lecturer or in an equivalent position.

This condition may be relaxed in the case of candidates with outstanding record of teaching/research.

Subject concerned or allied subject

Post Nos. 1 to 6 & 10 : English
Post No. 7 : German
Post No. 8 : French
Post No. 9 : Spanish

Desirable

For Post No. 1

Experience of preparing Correspondence Courses; Organising teacher training programmes; Materials Production and Extension work.

For Post No. 2

(a) Specialization in the Phonetics of English.

OR

(b) Applied Linguistics in relation to English Phonetics.

OR

(c) Specialization in Instrumental Phonetics.

OR

(d) Preparation of Materials for the Language Laboratory will be desirable in addition to the above requirements.

For Post No. 3

(i) Specialized training in the teaching of English.

(ii) Experience of organising research surveys, advanced courses and teacher training programmes in methods and materials in the field of English Language teaching at school or college levels.

(iii) Familiarity with inter-disciplinary approaches and psycho-socio perspectives in ELT/TESOL.

(iv) Ability to apply the results and techniques of international research to Indian contexts.

For Post No. 4

Special interest in Modern English Literature/ Criticism / Stylistics / Indian Writing in English.

For Post No. 5

Atleast five years experience in either (i) Radio/TV Programme production for language teaching, or (ii) Radio/ TV programme production for language teaching and the teaching of courses involving such programme production.

For Post No. 6

Specialization in English Literature: should be able to handle stylistics/ Indian writing in English.

OR

Specialization in the area of ELT/ Linguistics: should be able to write courses.

For Post No. 7

PGDTG or an equivalent qualification; Post Graduate teaching experience; experience of training teachers; experience of production of teaching materials.

For Post No. 8

Materials Production/Applied Linguistics/Translation.

Experience in organising Seminars/ Refresher Courses/Workshops.

For Post No. 9

Field of Study: Spanish Literature/ Language specialization:

(a) Special training in teaching Spanish as foreign language.

(b) Materials Production.

(c) Experience in organising teacher training programmes at Post Graduate level, symposia.

For Post No. 10

Phonology Psycholinguistics/Symbolic Logic.

III. Lecturers/Associate Fellows :

(Scale of Pay : Rs. 700-40-1100-50-1600)

1. Regional Centre, Lucknow (one post)
2. Regional Centre, Shillong (one post)
3. Department of Extension Services (one post)
4. Department of Radio, TV & Cinematography (one post)
5. Department of Evaluation (one post: leave vacancy)
6. Department of Correspondence Courses (three posts—one post leave vacancy)
7. Department of German (four posts—one post : leave vacancy)
8. Department of Russian (three posts—one post : leave vacancy)
9. Department of Spanish (one post)

Qualifications

Essential

(a) A doctor's degree or research work of an equally high standard; and

(b) Good academic record with atleast second class (C in the seven point scale) Master's degree in a relevant subject from an Indian University or an equivalent degree from a foreign university.

Having regard to the need for developing inter-disciplinary programmes, the degrees in (a) and (b) above may be in relevant subjects.

Provided that if the Selection Committee is of the view that the research work of a candidate is evident either from his thesis or from his published work is of very high standard; it may relax any of the qualifications prescribed in (b) above.

Provided further that if a candidate possessing a Doctor's degree or equivalent research work is not available or is not considered suitable, a person possessing a good academic record, (weightage being given to M.Phil. or quivalent degree or research work of quality) may be appointed provided he has done research work for at least two years or has practical experience in a research laboratory/organisation on the condition that he will have to obtain a Doctor's degree or give evidence of research of high standard within eight years of his appointment, failing which he will not be able to earn future increments until he fulfils these requirements.

For Posts of Lecturers/Associate Fellows in Foreign Languages:

Provided further that if a candidate possessing a Doctor's degree or equivalent research work is not available or is not considered suitable a person possessing a good academic record may be appointed provided he has done one year post M.A. Diploma course in the teaching of foreign languages concerned from a University on the condition that he will have to obtain a Doctor's degree or give evidence of research work of equivalent high standard within eight years of his appointment failing which he will not be able to earn future increments until he fulfils these requirements.

Explanation for determining "good academic record" the following criteria shall be adopted (for the posts of Readers and Lecturers).

(i) A candidate holding a Ph.D. degree should possess at least a second class Master's Degree; or

(ii) A candidate without a Ph.D. degree should possess a high second class Master's degree and second class in the Bachelor's degree; or

(iii) A candidate not possessing Ph.D. degree but possessing second class Master's Degree should have obtained first class in the Bachelor's degree.

Subject concerned or		**allied subject**
Post Nos. 1 to 6	—	English
Post No. 7	—	German
Post No. 8	—	Russian
Post No. 9	—	Spanish

Desirable

For Post No. 1 & 2

Experience of organising ELT programmes and producing teaching materials.

For Post No. 3

A post-graduate degree or diploma in English Language Teaching and experience in the production of teaching materials/organising ELT programmes; preferably at the school level.

For Post No. 4

(i) High level competence in English.

(ii) Practical knowledge of producing TV programmes.

For Post No. 5

A post graduate degree or diploma in English Language Teaching, English Studies with Testing as a subject covered.

Experience of producing teaching/testing materials in English, or of organising ELT programmes.

For Post No. 6

Specialisation in ELT/Linguistics and should be able to teach Phonetics and Spoken English.

OR

Specialisation in English Literature: Should be able to handle stylistics/Indian Writing in English.

For Post No. 7

(i) Experience of teaching and/or production of teaching materials.

(ii) Diploma in translation and/or experience in translation/interpretation.

For Post No. 8

Specialisation in

(i) Russian and Contemporary Soviet Literature; OR

(ii) Methodology of Teaching Russian as a Foreign Language; OR

(iii) Russian Linguistics / Modern Russian Language/Translation.

For Post No. 9

Field of Study Spanish Literature/Language Specialisation:

(a) Special training in teaching Spanish as foreign language.

(b) Materials Production

(c) Experience in organising teacher training programmes at Post Graduate level, symposia.

IV. Senior Programme Assistant

(Scale of Pay : Rs. 550-25-750-EB-30-900)

Qualifications

Essential

Atleast a second class Master's degree in English or Education or Psychology or Mass Communication/Mass Communication Arts from a recognised University with high level competence in English.

Desirable

PGDTE/PGDES from CIEFL with one of the courses offered by the Department.

Experience of work with Radio/Television. Evidence of active involvement in creative writing, dramatics or other relevant fine arts.

General Information

The Institute pays allowances at Central Government rates. Retirement Benefits will be as per the rules of the Institute.

A higher start in the grade may be considered for specially qualified candidates.

Due consideration will be given to candidates belonging to SC/ST for the posts of Lecturers/Associate Fellows.

Appointments to the posts of Senior Fellows, Fellows and Associate Fellows will be made on a contract for one year in the first instance, after which they will be considered for being appointed as Professors, Readers and Lecturers respectively on the recommendation of the Selection Committee.

Selected candidates will be expected to participate in the teaching and research programmes in other departments also and to work at Hyderabad or at any of the Regional Centres of the Institute.

Applicants appointed to substantive posts will be on probation for one year in the first instance.

The Institute reserves the right to accept late applications in exceptional cases.

A candidate applying from outside India will be exempted from the submission of application in the prescribed form and payment of application fee.

Age of retirement : Sixty years.

Instructions

1. Separate applications should be made for each post enclosing **seven copies of the list of papers** published with full particulars along with **one copy of each publication.**
2. Candidates not found suitable by the Selection Committee for the post they have applied for may be considered for a lower cadre post.
3. Candidates called for interview from a place outside Hyderabad will be paid a contribution towards their travelling expenses at the rate of Second Class railway fare, including sleeper coach charges from the place of their work or residence, whichever is nearer, by the shortest route, subject to the production of a railway receipt/ticket numbers.
4. Application form can be had from the Registrar, Central Institute of English and Foreign Languages, Hyderabad-500007, on payment of Rs. 2/- (for SC/ST 0.50 ps. only) in person or by Postal Order payable to "Director , CIEFL" and by sending a duly stamped self addressed envelope (10x23 cms. ordinary 0.70 ps., Regd. Post Rs. 3.45) indicating the name of the Post applied for.

K. Jayashankar
REGISTRAR

BERHAMPUR UNIVERSITY

BHANJA BIHAR, BERHAMPUR-760007
District-Ganjam, Orissa

No. 5705/Esst-I/BU/'85 **Dated : 19-6-85**

Applications are invited for the following posts in the prescribed form (Seven Copies) obtainable from the Registrar, Berhampur University on payment of Rs. 10/- (Rupees ten only) in person or by Bank draft drawn on the State Bank of India, in favour of the Registrar, Berhampur University alongwith a self addressed envelope (22 x 10 C.M.) with Rs. 1.50 (One rupee and fifty paise only) postage stamp affixed on it.

Applications duly filled in alongwith attested copies of the certificates, mark lists, testimonials and publications etc. must reach the undersigned on or before **10-7-85.** Applications received after this date will not be entertained.

Subject	Name of the post	No. of vacancies	Field of specialisation
Law	Professor	1	—
Law	Reader	1	—
History	Reader	1	Archaeology
Home Science	Reader	1	Extension Education/Nutrition/Home Management.
Journalism & Mass Communication	Reader	1	—
English	Reader (The basic degree should be in English)	1	Comparative literature/ World Literature/Creative Literature
English	Lecturer (against leave vacancy upto 1-8-86)	1	—
Political Science	Lecturer	1	International politics Comparative Politics, Research Methodology/ Modern Political analysis

Scale of Pay

Professor : Rs. 1500-60-1800-100-2000-125/2-2500/-.

Reader : Rs. 1200-50-1300-60-1900/-.

Lecturer : Rs. 700-40-1100-50-1600/-.

Qualifications

(a) **Professor :** An eminent scholar with published work of high quality actively engaged in research. About ten years experience of teaching and/or research experience of guiding and research at doctoral level.

OR

An outstanding scholar with established reputation who has made significant contribution to knowledge.

(b) **Reader :** Good academic record (as defined by U.G.C.) with a doctoral degree or equivalent published work. Evidence of being actively engaged in (i) research or (ii) innovation in teaching methods or (iii) production of teaching materials.

About five years experience of teaching and/or research provided that three or more years work as Lecturer or in an equivalent position.

This condition may be relaxed in th case of candidates with outstandineg record of teaching/research.

(c) **Lecturer :** (a) A Doctorate's degree or Research work of an equally high standard ; and

(b) Good academic record (as defined by the U.G.G.) with atleast Second class ('C' grade in the seven point scale) Master's degree in a relevant subject from an Indian University or an equivalent degree from a foreign University.

Having regard to the need for developing inter-disciplinary programme, the degrees may be in relevant subjects.

Provided that if the selection committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may relax the qualifications prescribed in 'C' and 'B' above.

Provided further that if a candidate passing a Doctor's Degree or equivalent research work is not available or not considered suitable, a person possessing good academic record, (weightage being given to M.Phil or equivalent degree for research work of quality) may be appointed provided he has done research work for at least two years, and has practical experience in a Research Laboratory /organisation on the condition that he will have to obtain a Doctor's Degree or give evidence of Research of high standard within 8 years from the date of his appointment failing which he will not earn future increments until he fulfils these requirements.

Instructions

(i) Candidates must submit their applications duly filled in alongwith Bank draft for Rs. 5.00 (five only) drawn on State Bank of India, Bhanja Bihar in favour of the Registrar Berhampur University.

(ii) Candidates who are in service should submit their application through proper channel. No. O.E.S. Officer will be called for interview unless his application is forwarded by Govt.

(iii) Selected candidates will be required to joint within one month from the date of issue of the appointment order, unless otherwise specified or permitted. No T.A. will be paid to the candidates for attending the interview.

(iv) The University reserves the right to fill-up or not to fill up the posts and/ or to call only selected candidates for interview.

B. Mahapatra
REGISTRAR

OSMANIA UNIVERSITY

HYDERABAD-500007. (A.P.)

Advertisement No. 6/85
Dated : 19th June 1985

Applications in the prescribed form together with the registration fee of Rs. 5/- payable through I.P.O./Demand Draft are invited for the post of Lecturer in Commerce in the grade of Rs. 700-40-1100-50-1600 in the University Service so as to reach the undersigned on or before **15th July 1985.**

Qualifications

(a) A Doctor's Degree or research work of an equally high standard; and

(b) Consistently good academic record with first or high second class (B in the seven point scale) Master's Degree in a relevant subject or an equivalent degree of a foreign University.

Age : Not above 35 years.

Note : (i) Age limit does not apply to the employees of this University.

(ii) Age relaxation can be considered in deserving cases.

(iii) Relaxation in age to the extent of five years may be granted to candidates belonging to SC, ST and BCs respectively in the case of Lecturers only.

14%, 4% and 25% reservations are made for SCs, STs and BCs respectively.

Application forms can be had from the Director, University Press, Osmania University, Hyderabad on payment of Rs. 4.50 in person or by sending I.P.O./Demand Draft payable to the Director, OU Press alongwith a self addressed envelope (14½ × 26½ cms) duly stamped for ordinary or registered post.

REGISTRAR

BANARAS HINDU UNIVERSITY

Corrigendum to Advertisement No. 2/ 1985-86—Item No. 38

The designation of the post may be read as "Lecturer in Mimansa" instead of "Lecturer in Dharmashastra & Mimansa". Accordingly candidates possessing Degrees in relevant subject i.e. Mimansa should only apply as per qualifications circulated.

JADAVPUR UNIVERSITY

CALCUTTA-32

Employment Notification
No. A2/C/11/85
Dated : 15th June 1985

The University invites applications in the prescribed form for the following post:

1. Finance Officer : One post.

Scale of Pay : Rs. 1500-60-1800-100-2000-125/2-2500/-

Qualifications

(a) Bachelor's Degree with good academic record;

(b) Chartered Accountant or Cost Accountant or equivalent professional qualification

OR

Master's Degree in Business Administration with specialisation in finance.

(c) Seven years of working experience in Management of finance in a Government/University/Commercial Establishment.

Last date of receiving applications is **11th July, 1985.**

Application forms are obtainable from the University Office during working hours on payment of Rs. 2/- or by post on payment of Rs. 3/- including postages. No travelling allowance is admissible to candidates called for interview. Higher initial salary may be given to really deserving candidates. Those who are in employment should submit their applications through proper channel. Choice of Appointment Committee will not necessarily be confined to applicants only. Canvassing in any form will disqualify a candidate.

REGISTRAR

HARYANA AGRICULTURAL UNIVERSITY

Corigendum to Advertisment No.4/85

The words "Gymnastic/Handball" mentioned at the end of Sr. No. (iii) for the post of Professor in Physical Education may be treated as deleted.

REGISTRAR

UNIVERSITY NEWS

University News is published weekly by the Association of Indian Universities to promote awareness of contemporary thinking on higher education. Views expressed in the journal are those of the authors and do not reflect the policies of the Association.

Articles are invited by the Editor on matters relating to University education. Manuscripts (in duplicate) should be sent to Editor, University News, Association of Indian Universities, AIU House, 16 Kotla Marg, New Delhi-110002. They should be typed on one side of the paper, double spaced with wide margins. Each article should be accompanied by a summary/abstract of 100/150 words on a separate sheet.

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ATMA RAM SANATAN DHARMA COLLEGE

(UNIVERSITY OF DELHI)

DHAULA KUAN, NEW DELHI-110021

Applications in the prescribed proforma obtainable from the College office on request, or by sending a self-addressed stamped envelope (23 cm x 10 cm), are invited for the following posts of lecturers in the grade of Rs. 700-1600 and usual allowances as per the University of Delhi rules:

I. 1. Physics — 2—Permanent
1—Part-time
2. Mathematics — 1—Part-time
3. History — 1—Permanent
1—Part-time
4. English — 1—Permanent
5. Hindi — 1—Permanent
6. Political Science — 1—Leave Vacancy
II. Director of Physical Education — 1—Permanent

Qualifications

Essential for Lecturers posts listed at 1 to 6.

(a) A Doctorate degree or research work of an equally high standard; and

(b) Good academic record with at least Second Class (C in the seven point scale) Master's degree in a relevant subject from an Indian University or an equivalent degree from a foreign University.

Having regard to the need for developing inter-disciplinary programmes, the degrees in (a) and (b) above may be in relevant subjects.

Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his or her thesis or from his or her published work is of a very high standard, it may relax any of the qualifications prescribed in (b) above.

Provided further that if a candidate possessing a Doctor's Degree or equivalent research work is not available or is not considered suitable, a person possessing a good academic record (weightage being given to M. Phil or equivalent degree or research work of quality) may be appointed provided he or she has done research work for at least two years or has practical experience in a research laboratory/organisation on the condition that he or she will obtain a Doctor's degree or give evidence of research of high standard within eight years of his or her appointment, failing which he or she will not be able to earn future increment until he or she fulfils these requirements.

Desirable Qualifications for the Post of Lecturer/Part-Time Lecturer in History :

(i) Lecturer: Specialisation in : Social Formations and Cultural Patterns of Ancient and Medieval World; History of China and Japan.

(ii) Part-Time Lecturer : Specialisation in History of Europe; Ancient or Modern India.

Essential requirement for both the posts in History is the ability to teach through the Hindi Medium.

Qualifications for the Post of Director of Physical Education

(i) A Master's Degree in Physical Education (High Second Class) with Diploma in Sports Coaching from a recognised institute.

OR

A Master's Degree in Physical Education (High Second Class) with a record of having represented his University at the Inter-University level/State in the National Championship.

(ii) Experience in organising games and sports (as exemplified in handling of about half of a dozen teams in a year in his institution and their participation in the University/Inter-College Tournaments) and ability to encourage mass participation in games and sports.

NOTE : The College reserves the right to revise the actual number and the nature of vacancies to be filled up subject to the actual need and also the teacher-pupil ratio constraints.

Completed applications for the posts listed above, alongwith attested copies of degrees/testimonials, should reach the Principal on or before July 15, 1985.

Dr. R.K. Kaushik
PRINCIPAL

UNIVERSITY NEWS, JULY 1, 1985 Regd. No. R. N. 7180/63 Post Regd. D(C).1086

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